

**Pioneer** *sound.vision.soul*

# Service Manual



DV-585A-S

DVD PLAYER

# DV-585A-S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
DV-585A-S	WYXTL	AC220-240V	2	
DV-585A-S	WVXTL	AC220-240V	2	
DV-585A-K	WYXTL	AC220-240V	2	
DV-585A-S	WYXTL/UR	AC220-240V	5	



For details, refer to "Important Check Points for Good Servicing".

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T-ZZR MAY 2005

# SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

## WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.  
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

## LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW  
WAVELENGTH : 650 nm  
FOR CD : MAXIMUM OUTPUT POWER : 5 mW  
WAVELENGTH : 780 nm

# LABEL CHECK

Location: inside of the unit

**CAUTION** : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.  
**VORSICHT** : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN !  
**ADVARSEL** : SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGA UDSÆTTELSE FOR STRÅLING.  
**VARNING** : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN.  
**VARO!** : AVATTAESSÄ ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE LASERSATEIL YLLÄ. ÄLÄ KATSO SÄTEESÄN.  
**CUIDADO** : RADIACIÓN LASER VISIBLE E INVISIBLE AL ESTAR ABIERTO. EVITAR EXPOSICIÓN AL RAYO.

7260000356 SH

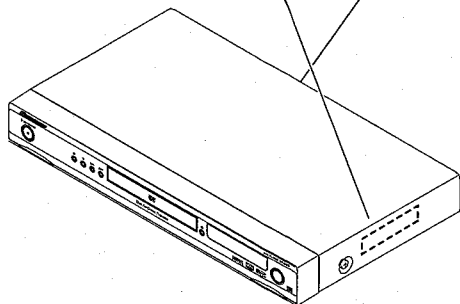
**CLASS 1  
LASER PRODUCT**

(Printed on the Rear Panel)

## Additional Laser Caution

1. Laser diode is driving with Q2303, Q2305(650nm LD) and Q2302, Q2304(780nm LD) on the DVD MT PCB Assy.  
Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)  
• In the test mode \*, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

\* : See page 49.



DV-585A-S

## [Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

### 1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

### 2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

### 3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

### 4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

### 5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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# 1. SPECIFICATIONS

## Specifications

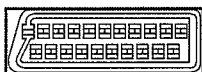
### General

System.....DVD player  
 Power requirements... AC 220–240 V, 50/60 Hz  
 Power consumption.....8W  
 Power consumption (standby).....0.85 W  
 Weight.....1.7 kg  
 Dimensions  
 .....420 (W) x 49.5 (H) x 214.9 (D) mm  
 Operating temperature.....+5°C to +35°C  
 Operating humidity.....5% to 85%  
 (no condensation)

### AV connector output

AV Connector (21-pin connector assignment)  
 AV connector output.....21-pin connector  
 This connector provides the video and audio signals for connection to a compatible colour TV or monitor.

21 19 17 15 13 11 9 7 5 3 1



20 18 16 14 12 10 8 6 4 2

### PIN no.

1.....Audio 2/R out  
 3.....Audio 1/L out  
 4.....GND  
 7.....B out  
 8.....Status  
 11.....G out  
 15.....R out  
 17.....GND  
 19.....Video out  
 21.....GND

### Component video output

Y (luminance) - Output level.....1 Vp-p (75 Ω)  
 P<sub>B</sub> (color) - Output level.....0.7 Vp-p (75 Ω)  
 P<sub>R</sub> (color) - Output level.....0.7 Vp-p (75 Ω)  
 Jack.....RCA

### S-video output

Y (luminance) - Output level.....1 Vp-p (75 Ω)  
 C (color) - Output level.....286 mVp-p (75 Ω)  
 Jack.....S-video

### Video output

Output level.....1 Vp-p (75 Ω)  
 Jack.....RCA

### Audio output (1 stereo pair)

Output level.....During audio output  
 200 mVrms (1 kHz, –20 dB)  
 Number of channels.....2  
 Jacks.....RCA

### Audio output (multi-channel / L, R, C, SW, SL, SR)

Output level.....During audio output  
 200 mVrms (1 kHz, –20 dB)  
 Number of channels.....6  
 Jacks.....RCA jack

### Digital audio characteristics

Frequency response.....4 Hz to 44 kHz  
 (DVD fs: 96 kHz)  
 4 Hz to 48 kHz (DVD-Audio fs: 192 kHz)  
 S/N ratio.....115 dB  
 Dynamic range.....101 dB  
 Total harmonic distortion.....0.0023 %  
 Wow and flutter.....Limit of measurement  
 (±0.001% W. PEAK) or lower


### Digital output

Coaxial digital output.....RCA jack  
 Optical digital output.....Optical digital jack

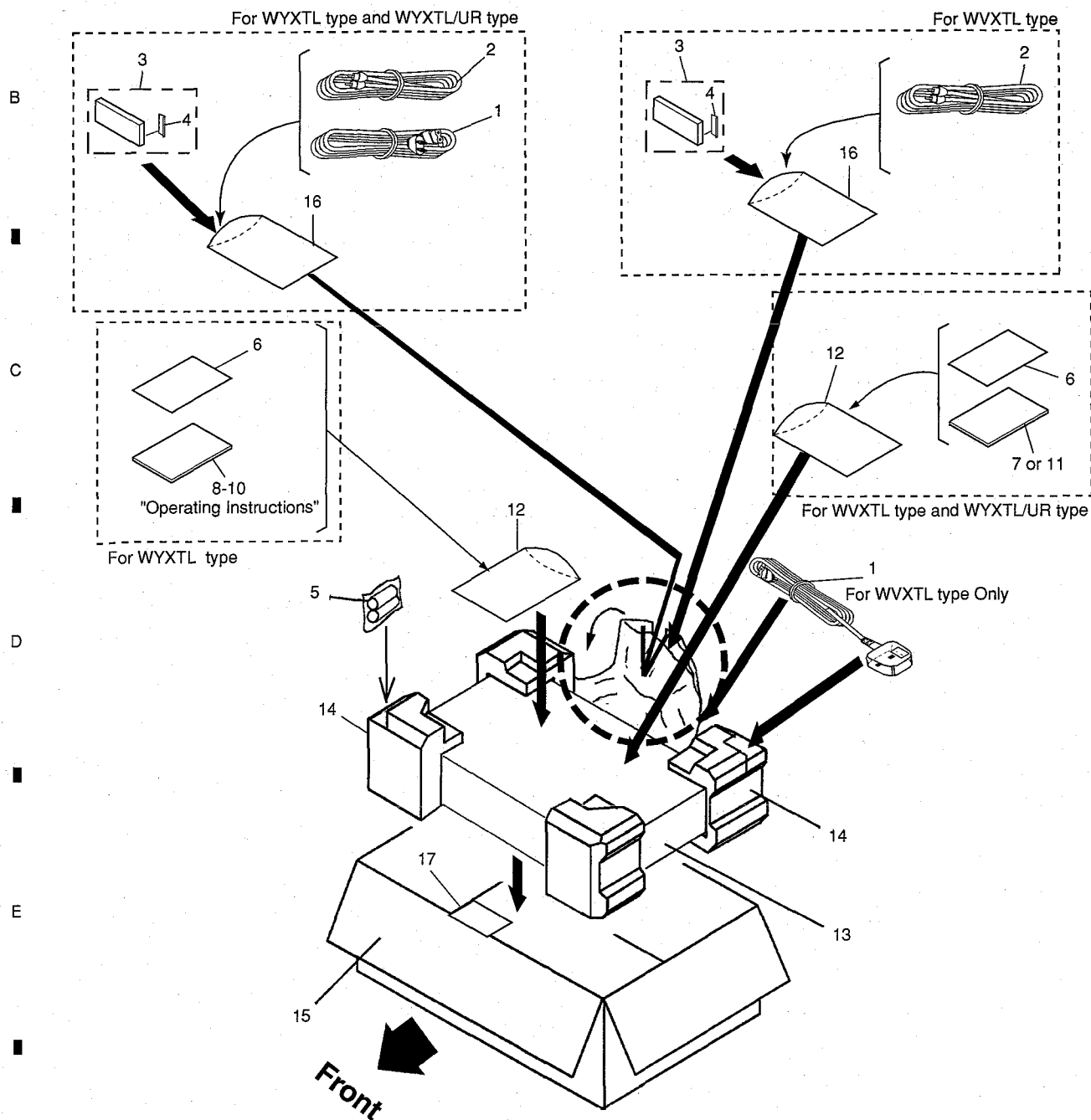
### Accessories

Audio/video cable.....1  
 Power cable.....1  
 Remote control.....1  
 AA/R6P dry cell batteries.....2  
 Warranty card.....1  
 Operating Instructions

## 2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.  
 ● The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
 ● Screws adjacent to ▼ mark on product are used for disassembly.  
 ● For the applying amount of lubricants or glue, follow the instructions in this manual.  
 (In the case of no amount instructions, apply as you think it appropriate.)

### 2.1 PACKING SECTION



5

**PACKING SECTION parts List**

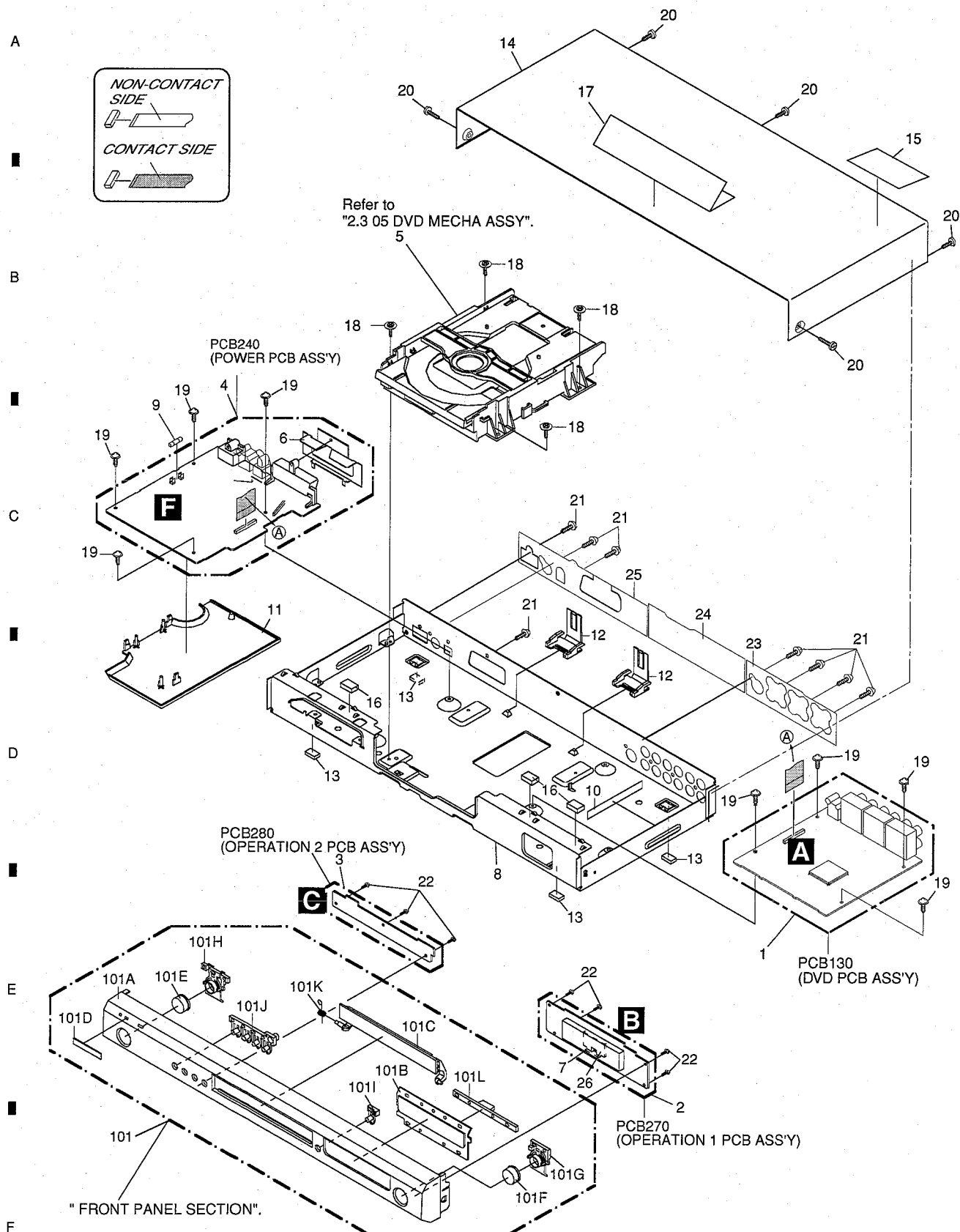
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord set AC	See Contrast table (2)	11	Operating Instructions	See Contrast table (2)
2	Cord, RCA Pin	06CPBA2006	12	Polyethylene Bag	See Contrast table (2)
3	Remote Control	VXX2914	13	Gift Sheet	791WHA0100
4	Battery Cover	VNK4998	14	Package	See Contrast table (2)
NSP 5	Battery,Mangan (AR, R6P)	141L003010	15	Gift Box	See Contrast table (2)
NSP 6	Guarantee Card	J2G60402A	NSP 16	Poly. Bag	791WHAA040
7	Operating Instructions	See Contrast table (2)	17	Package.Pad	792WHA0604
8	Operating Instructions	See Contrast table (2)			
9	Operating Instructions	See Contrast table (2)			
10	Operating Instructions	See Contrast table (2)			

**(2) CONTRAST TABLE**

DV-585A-S/WYXTL, /WVXTL, /WYXTL/UR and DV-585A-K/WYXTL are constructed the same except for the following :

Mark	No.	Symbol and Description	DV-585A-S/WYXTL	DV-585A-S/WVXTL	DV-585A-S/WYXTL/ UR	DV-585A-K/WYXTL
⚠	1	Cord Set AC	1206158802	1206138802	1206158802	1206158802
	7	Operating Instructions (English)	Not used	J2G60301B	Not used	Not used
	8	Operating Instructions (English, Italian)	J2G60421A	Not used	Not used	J2G60421A
	9	Operating Instructions (German, French)	J2G60422A	Not used	Not used	J2G60422A
	10	Operating Instructions (Spanish, Dutch)	J2G60423A	Not used	Not used	J2G60423A
	11	Operating Instructions (Russian)	Not used	Not used	J2G61001A	Not used
	12	Polyethylene Bag, Instruction	JB5UD400	JB5UD200	JB5UD200	JB5UD400
	14	Package	792WHA0588	792WHA0597	792WHA0588	792WHA0588
	15	Gift Box	793WCDC698	793WCDC764	793WCDC763	793WCDC769

## 2.2 EXTERIOR SECTION



5  
**EXTERIOR SECTION parts List**

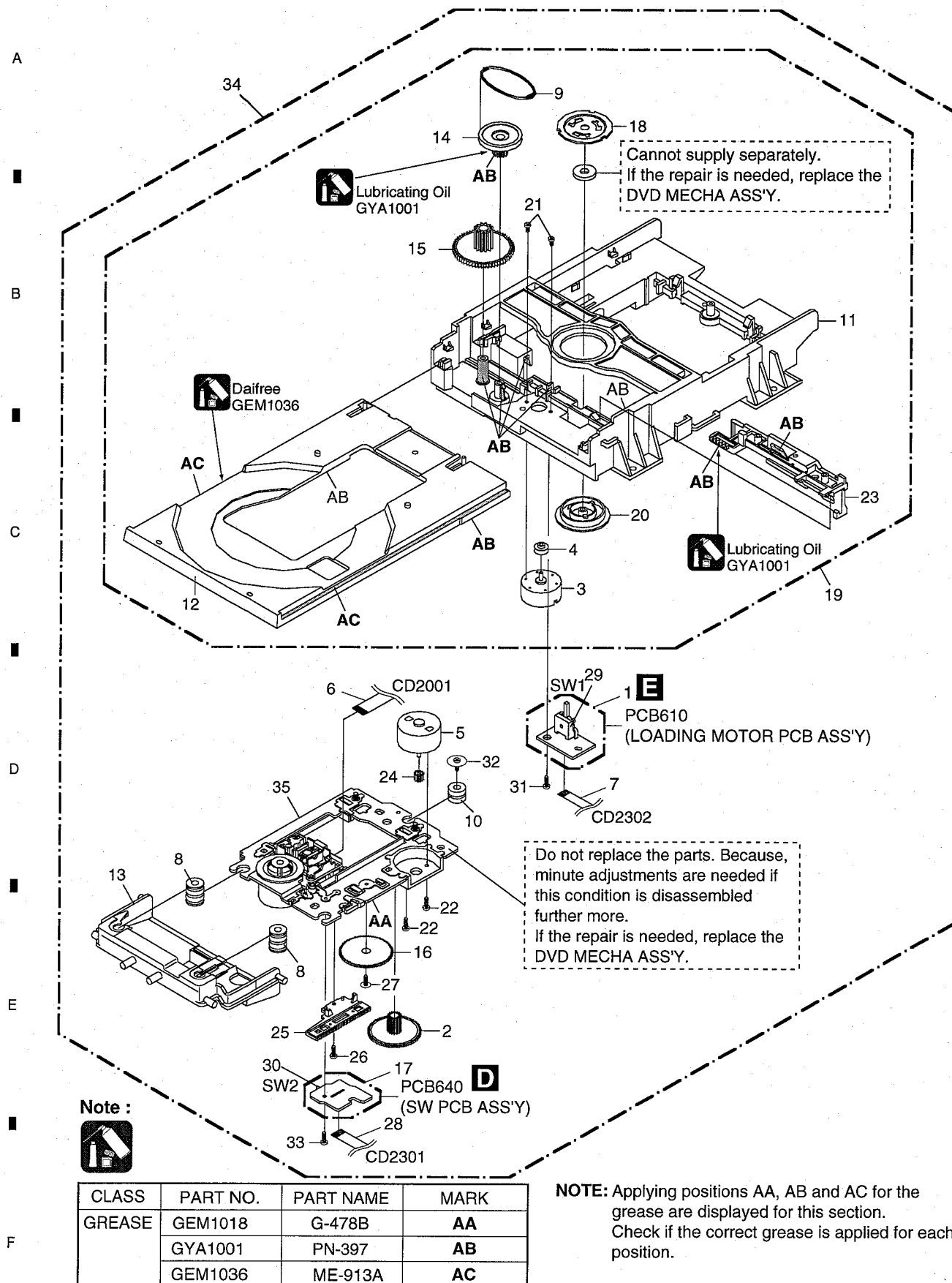
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	DVD MT PCB Assy	A2G604A130	23	Sheet,Jack 1	7226310050
2	OPERATION PCB Assy	A2G604A270	24	Sheet,Jack 2	See Contrast table (2)
3	OPERATION 2 PCB Assy	A2G502A280	25	Sheet,Jack 3	See Contrast table (2)
⚠ 4	POWER PCB Assy	A2G604A240			
⚠ 5	DVD MECHA ASSY	A2G512A650	26	Double,Face-Tape	7290000156
			27	• • • •	
6	Shield, 21Pin	761WSA0237	28	• • • •	
7	Holder, Display	762WSA0368	101	Front Cabi Assy	See Contrast table (2)
NSP 8	Plate,Bottom	702WSA0238	NSP 101A	Cabinet, Front	See Contrast table (2)
⚠ 9	Fuse (F501 : 1.6A)	080NT1R604			
10	Sheet, Caution	7260000356	NSP 101B	Plate, Display	711WPA0225
			101C	Flap, DVD	See Contrast table (2)
11	Plate,Cover Power	755WPA0046	101D	Badge, Brand	See Contrast table (2)
12	Holder,FFC	761WPA0396	NSP 101E	Button, Cap Power	See Contrast table (2)
13	Cushion, Leg	VEB1349	NSP 101F	Button, Cap Play	See Contrast table (2)
14	Cabinet, Top	See Contrast table (2)			
15	Sheet, Caution	725000A088	NSP 101G	Button, Frame 3	738WPA0131
			NSP 101H	Button, Frame 4	738WPA0137
16	Cushion (15x20x16)	8965TS1015	NSP 101I	Button, Frame 1	See Contrast table (2)
NSP 17	POP Label	7236310020	NSP 101J	Button, Frame 2	See Contrast table (2)
18	Screw, Tap Tite(S)Bind Wash.	816423063U	101K	Spring,Flap-DVD	743WKAA012
19	Screw, Tap Tite(S) (3x5.5)	8107D3055U			
20	Screw, Tap Tite(B) (3x6.0)	See Contrast table (2)	NSP101L	Holder, Display	761WPA0368
21	Screw, Tap Tite(B)Pan (3x6)	810913060U			
22	Screw, Tap Tite(P)Bind (2.6x8)	811022680U			

**(2) CONTRAST TABLE**

DV-585A-S/WYXTL, /WVXTL, /WYXTL/UR and DV-585A-K/WYXTL are constructed the same except for the following :

Mark	No.	Symbol and Description	DV-585A-S/WYXTL	DV-585A-S/WVXTL	DV-585A-S/WYXTL/UR	DV-585A-K/WYXTL
	14	Cabinet, Top	702WSB0114	702WSB0114	702WSB0114	702WSB0115
	20	Screw, Tap Tite(B) (3x6.0)	8109K3060U	8109K3060U	8109K3060U	8109K3060S
	24	Sheet,Jack 2	722631A027	722631A027	722631A027	722631A024
	25	Sheet,Jack 3	722631A028	722631A028	722631A038	722631A028
	101	Front Cabi Assy	7A701A393A	7A701A393A	7A701A393A	7A701A459A
NSP	101A	Cabinet, Front	701WPJD002	701WPJD002	701WPJD002	701WPJD061
	101C	Flap, DVD	712WPJC151	712WPJC151	712WPJC151	712WPJC152
	101D	Badge, Brand	7236310014	7236310014	7236310014	7236310009
NSP	101E	Button, Cap Power	737WPEA001	737WPEA001	737WPEA001	737WPA0024
NSP	101F	Button, Cap Play	737WPEA002	737WPEA002	737WPEA002	737WPA0025
NSP	101I	Button, Frame 1	738WPB0050	738WPB0050	738WPB0050	738WPA0156
NSP	101J	Button, Frame 2	738WPB0051	738WPB0051	738WPB0051	738WPA0157

## 2.3 05 DVD MECHA SECTION



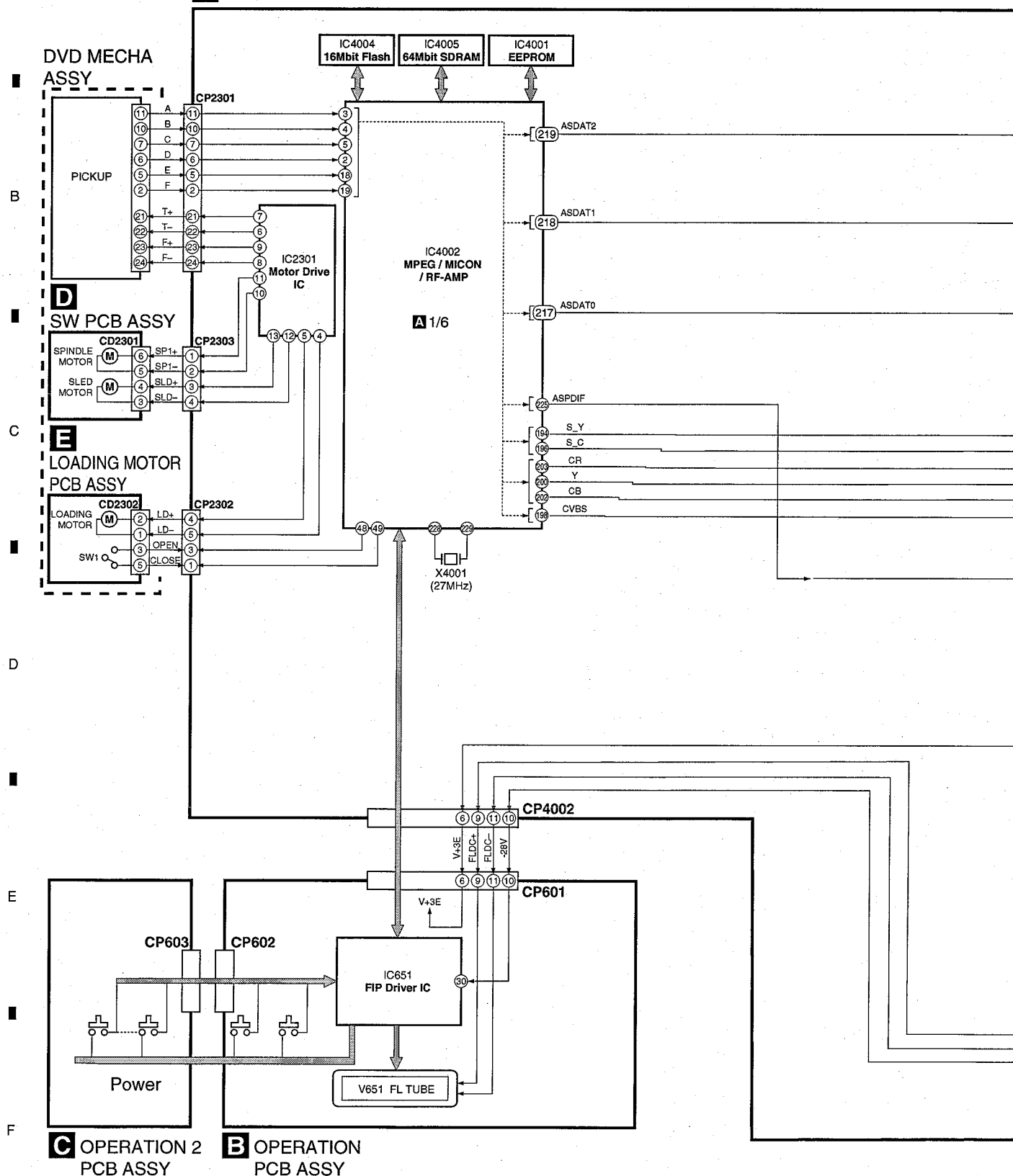
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Loading Motor PCB Assy	A2F101A610
2	Gear,Middle	92P100117A
⚠ 3	Loading Motor	1515S98004
4	Pulley,Motor	92P100097A
⚠ 5	FEED Motor	1515S98004
6	Cord Jumper (24P)(CD2001)	122H002305
7	Cord Jumper (CD2302)	122H051602
8	Insulator (F)	92P200013A
9	Belt,Loading	92P200015A
10	Insulator (R)	92P200016A
11	Frame,main	92P100119A
12	Tray (B)	92P100127A
13	Holder ,Traverse	92P100125A
14	Gear,Pulley	92P100123A
15	Gear,Main	92P100124A
16	Gear,Feed	92P100116A
17	SW PCB Assy (PCB640)	A2F101A640
18	Plate,Clamper	92P000023A
NSP 19	Loader SUB Assy	92AAA0019A
20	Clamper	92P100122A
21	Screw,Pan (M1.7x3 P3)	814011730U
22	Screw,Pan (M1.7x2.3 P3)	814011723U
23	Rack,Loading	92P100121A
24	Gear,Motor	92P100088A
25	Feed Rack Assy	92AAA0017A
26	Screw,T-Tite(B) (M1.7x5.0 P3)	813381750U
27	Screw,Gear Feed	92P700007A
28	Cord Jumper (CD2301)	122H061605
29	Switch (SW1)	0515S32003
30	Push Switch (SW2)	0500101036
31	Screw,Tap Tite(P) (2.6x8)	811022680U
32	Sems.Tap Tite(P) (2x8)	816112080U
33	Screw (Bind 2x8)	811022080U
⚠ 34	DVD MECHA ASSY	A2G512A650
NSP 35	Traverse SUB ASSY	92AAA0016A

# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

## 3.1 BLOCK DIAGRAM

A

**A** DVD MT PCB ASSY



D

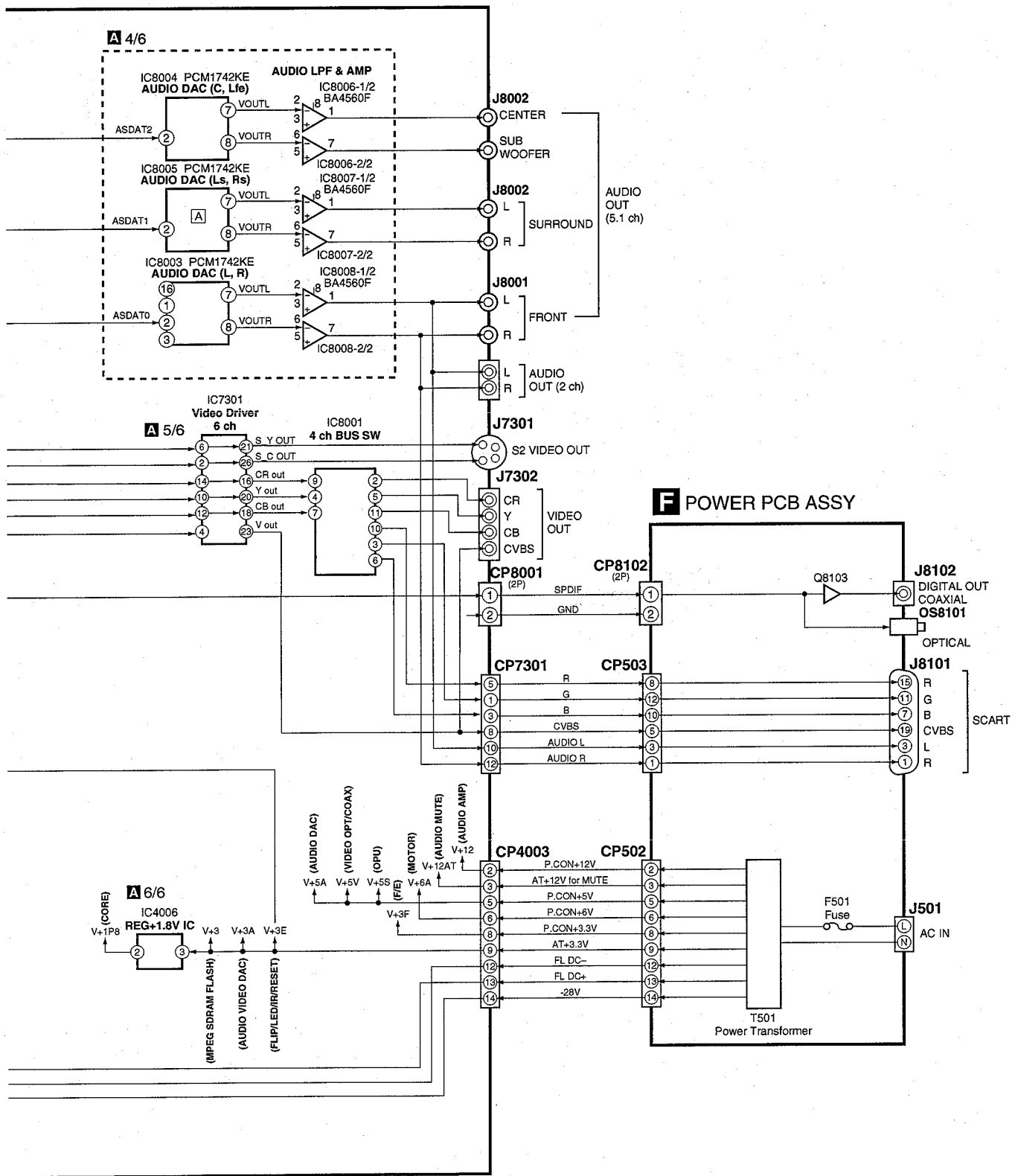
E

F

**C** OPERATION 2 PCB ASSY

**B** OPERATION PCB ASSY





## 3.2 OVERALL WIRING CONNECTION DIAGRAM

A

### DVD MECHA ASSY (A2G512A650)

OPTICAL PICKUP

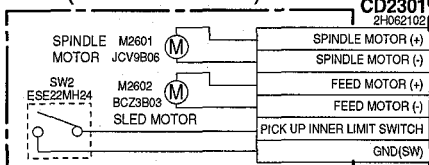


F-	24	24	FOCS RTN
F+	23	23	FOCS DRV
T-	22	22	TRKG RIN
T+	21	21	TRKG DRV
NC	20	20	NC
GND(CD)	19	19	GND
VOL(DVD)	18	18	LD_DVD(850)
GND(DVD)	17	17	PD/GND
LD(DVD)	16	16	LD_CD(780)
GND(DVD)	15	15	GND
VOL(CD)	14	14	VR780(CD)
MON(COM)	13	13	VRCOM
MON(DVD)	12	12	VR650(DVD)
A	11	11	A
B	10	10	B
RF	9	9	VR/RF_OUT
DVD/CD(SW)	8	8	SW1(DVD/CD)
C	7	7	C
D	6	6	D
E	5	5	E
VCC	4	4	VCC
VREF	3	3	VS
F	2	2	F
GND	1	1	GND

#### CP2301

24	FOCS RTN
23	FOCS DRV
22	TRKG RIN
21	TRKG DRV
20	NC
19	GND
18	LD_DVD(850)
17	PD/GND
16	LD_CD(780)
15	GND
14	VR780(CD)
13	VRCOM
12	VR650(DVD)
11	A
10	B
9	VR/RF_OUT
8	SW1(DVD/CD)
7	C
6	D
5	E
4	VCC
3	VS
2	F
1	GND

### D SW PCB ASSY (A2F101A640)



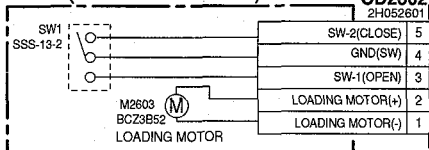
#### CD2301

6	FFC
5	SPINDLE MOTOR (+)
4	SPINDLE MOTOR (-)
3	FEED MOTOR (+)
2	FEED MOTOR (-)
1	PICK UP INNER LIMIT SWITCH
	GND(SW)

#### CP2303

1	SP1+
2	SP1-
3	SLD+
4	SLD-
5	LIMIT SW
6	SW(GND)

### E LOADING MOTOR PCB ASSY (A2F101A610)



#### CD2302

5	SW-2(CLOSE)
4	GND(SW)
3	SW-1(OPEN)
2	LOADING MOTOR(+)
1	LOADING MOTOR(-)

#### CP2302

1	CLOSE
2	GND(D)
3	OPEN
4	LD+
5	LD-

#### CP4002

069EV63030

1	CLK
2	DI (M to F)
3	STB
4	DO (F to M)
5	IR
6	V+3E
7	DGND
8	DGND
9	FLDC+
10	-28V
11	FLDC-

#### CD601(11P FFC)

122H0B1002

### C

### OPERATION 2 PCB ASSY (A2G502A280)

#### CP602

069EV63050

1	SW1
2	POWER
3	PAUSE/-SKIP
4	+SKIP
5	STOP
6	SW2

#### CD603(6P FFC)

122H062801

#### CP603

069EV63050

6	SW1
5	POWER
4	PAUSE/-SKIP
3	+SKIP
2	STOP
1	SW2

### B



### OPERATION PCB ASSY (A2G604A270)

#### CP601

069EV63050

D E

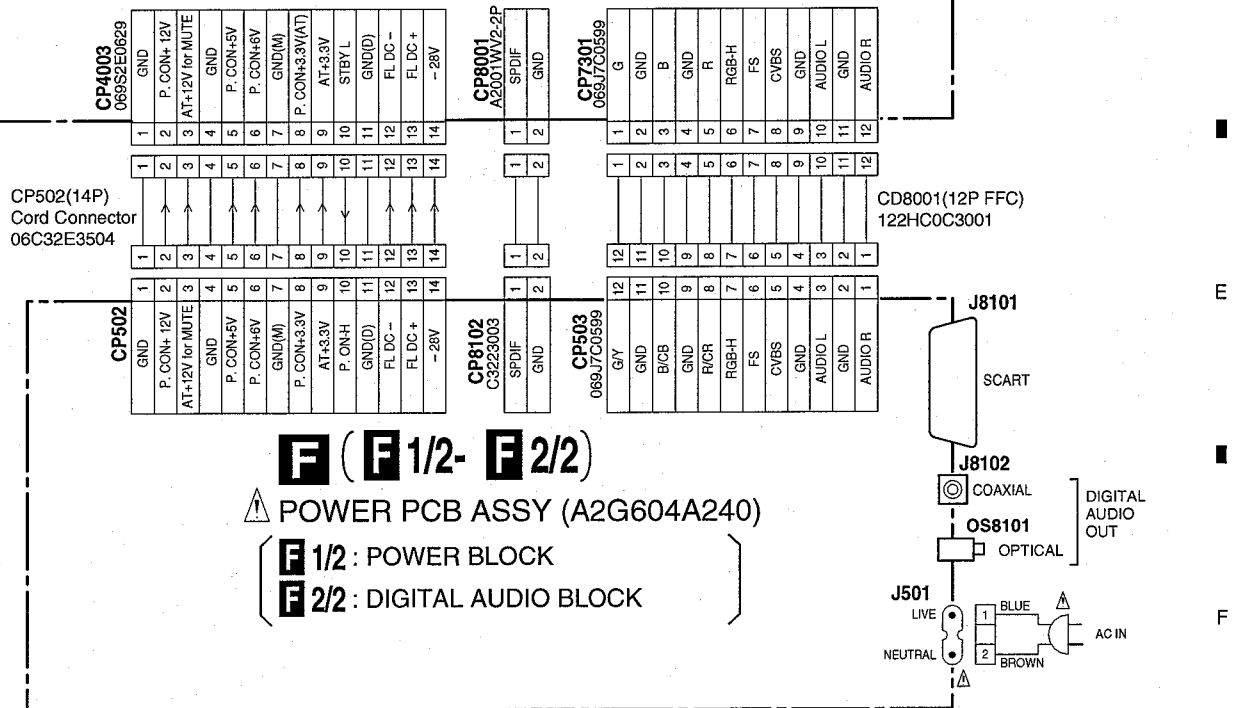
DV-585A-S

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
-  : The power supply is shown with the marked box.

## A (A 1/6- A 6/6)

### DVD MT PCB ASSY (A2G604A130)

- A 1/6 : MPEG/MICON/RF-AMP BLOCK
- A 2/6 : MEMORY BLOCK
- A 3/6 : LOADER/MOTOR DRV BLOCK
- A 4/6 : AUDIO JACK BLOCK
- A 5/6 : VIDEO SEC BLOCK
- A 6/6 : POWER PORT BLOCK



## F (F 1/2- F 2/2)

### POWER PCB ASSY (A2G604A240)

- F 1/2 : POWER BLOCK
- F 2/2 : DIGITAL AUDIO BLOCK

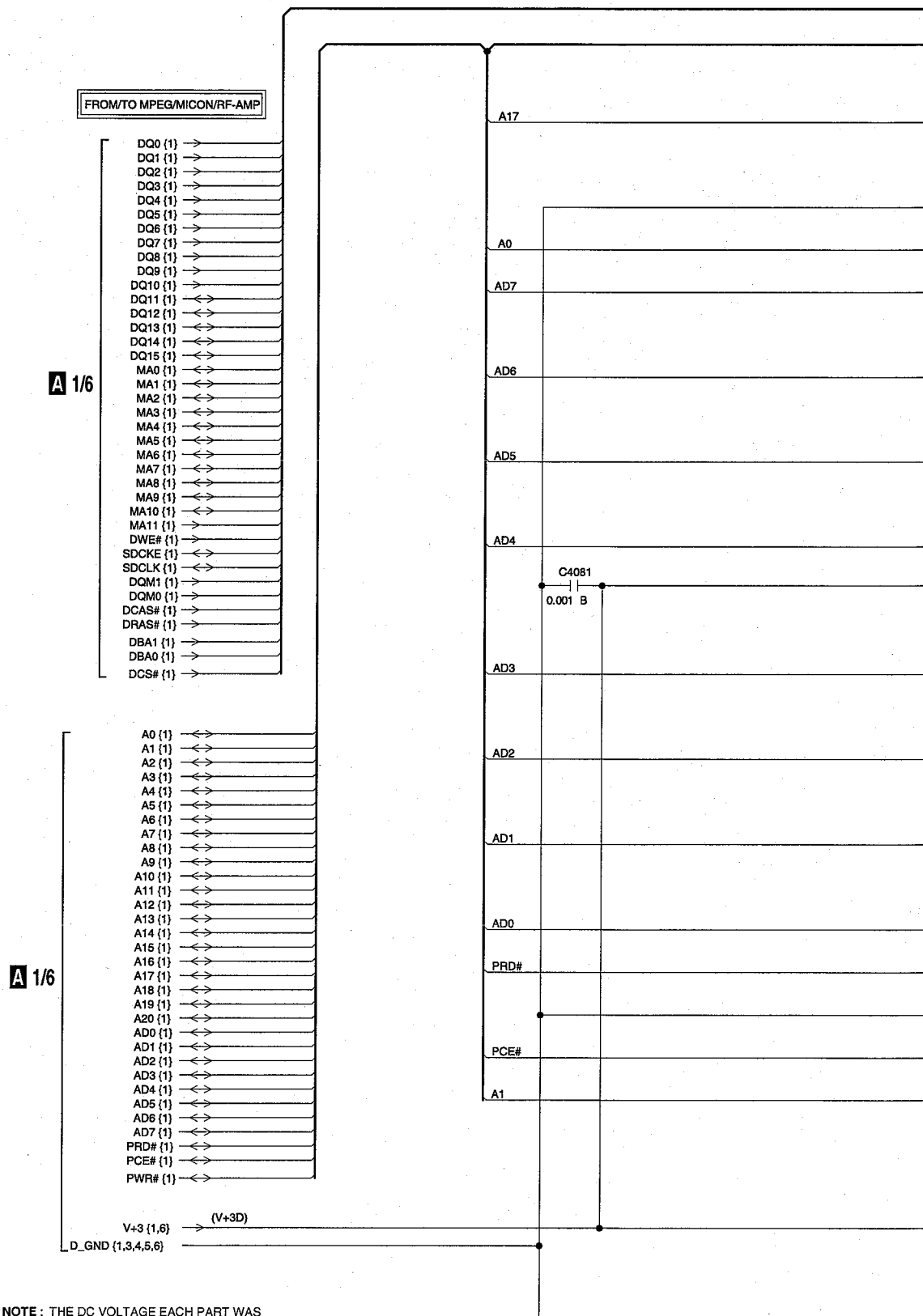
**A 1/6 DVD MT PCB ASSY (A2G604A130)**  
**• MPEG/MICON/RF-AMP BLOCK**





### 3.4 DVD MT PCB (2/6) ASSY

#### A 2/6 DVD MT PCB ASSY (A2G604A130) • MEMORY BLOCK

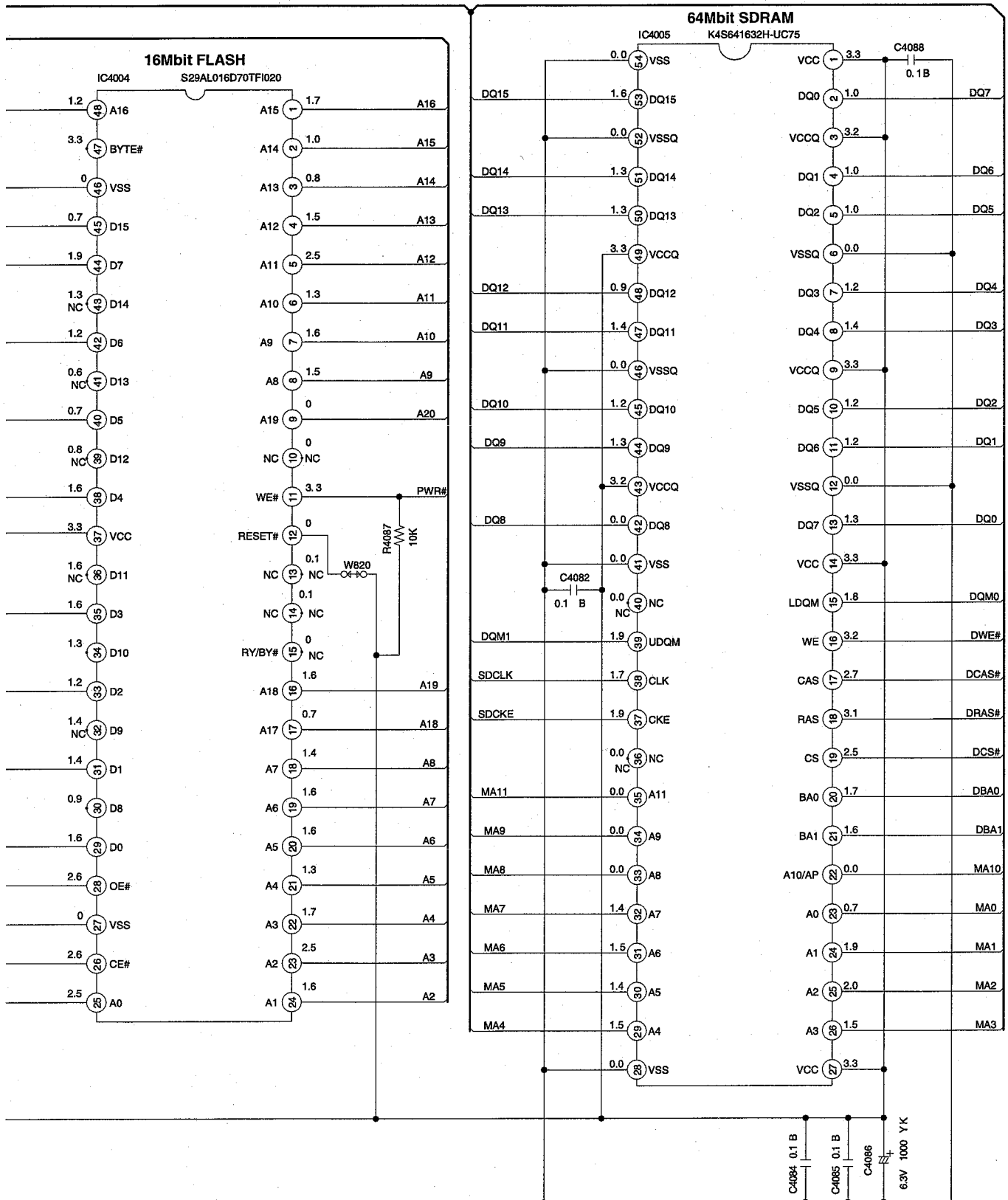


NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

A 2/6

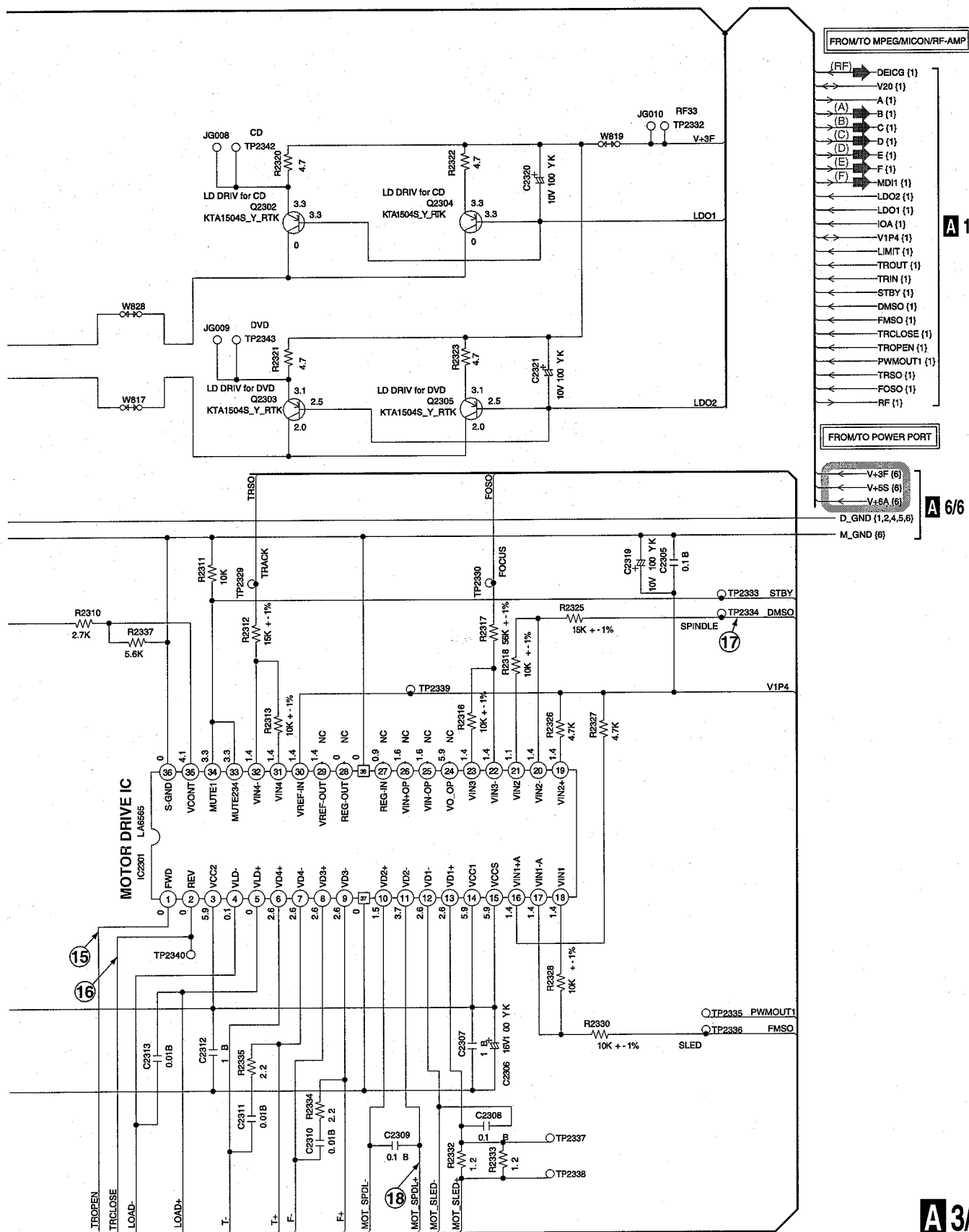
DV-585A-S







(RF) : RF SIGNAL ROUTE

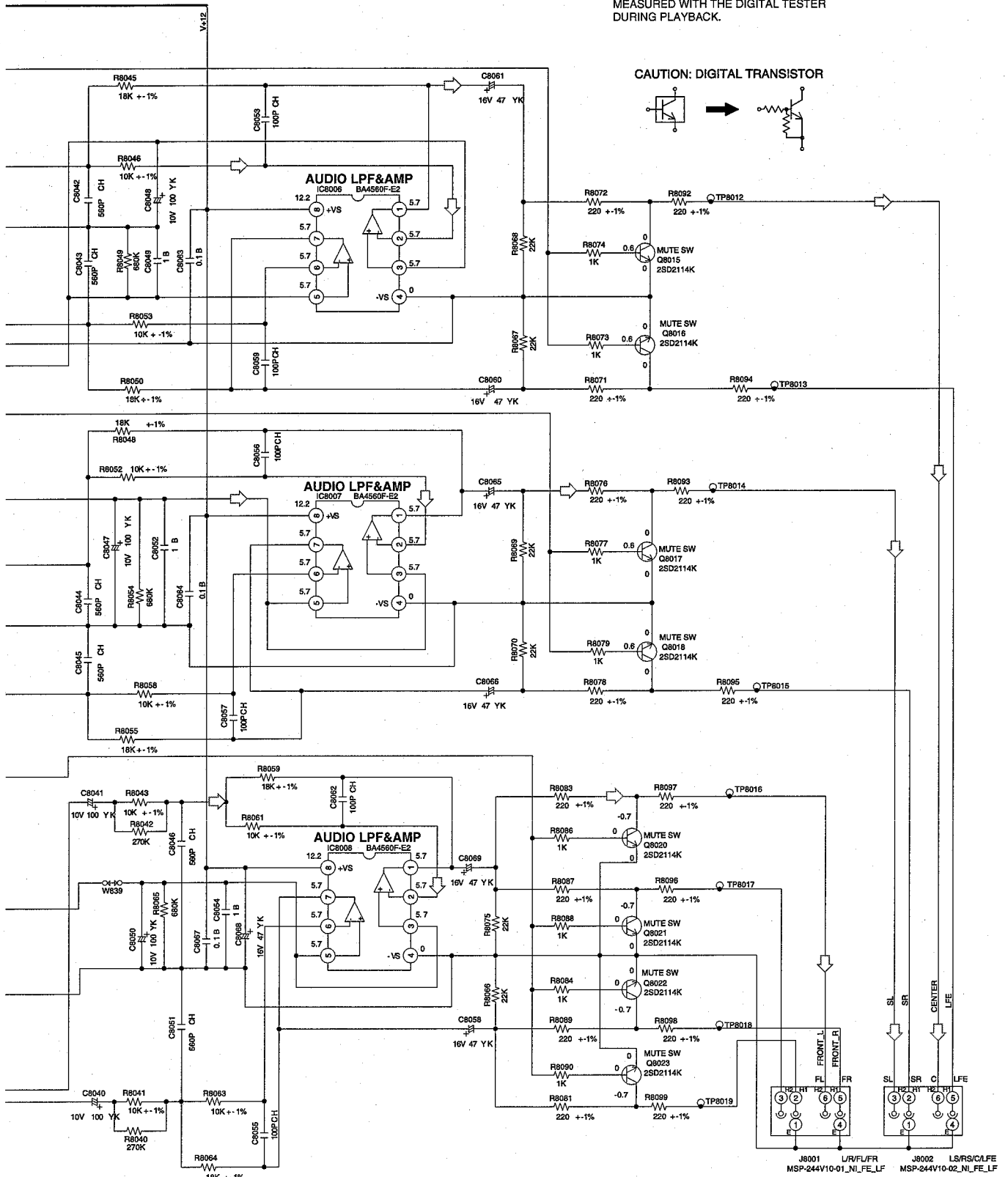
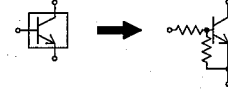


**A 4/6 DVD MT PCB ASSY (A2G604A130)**  
**• AUDIO JACK BLOCK**



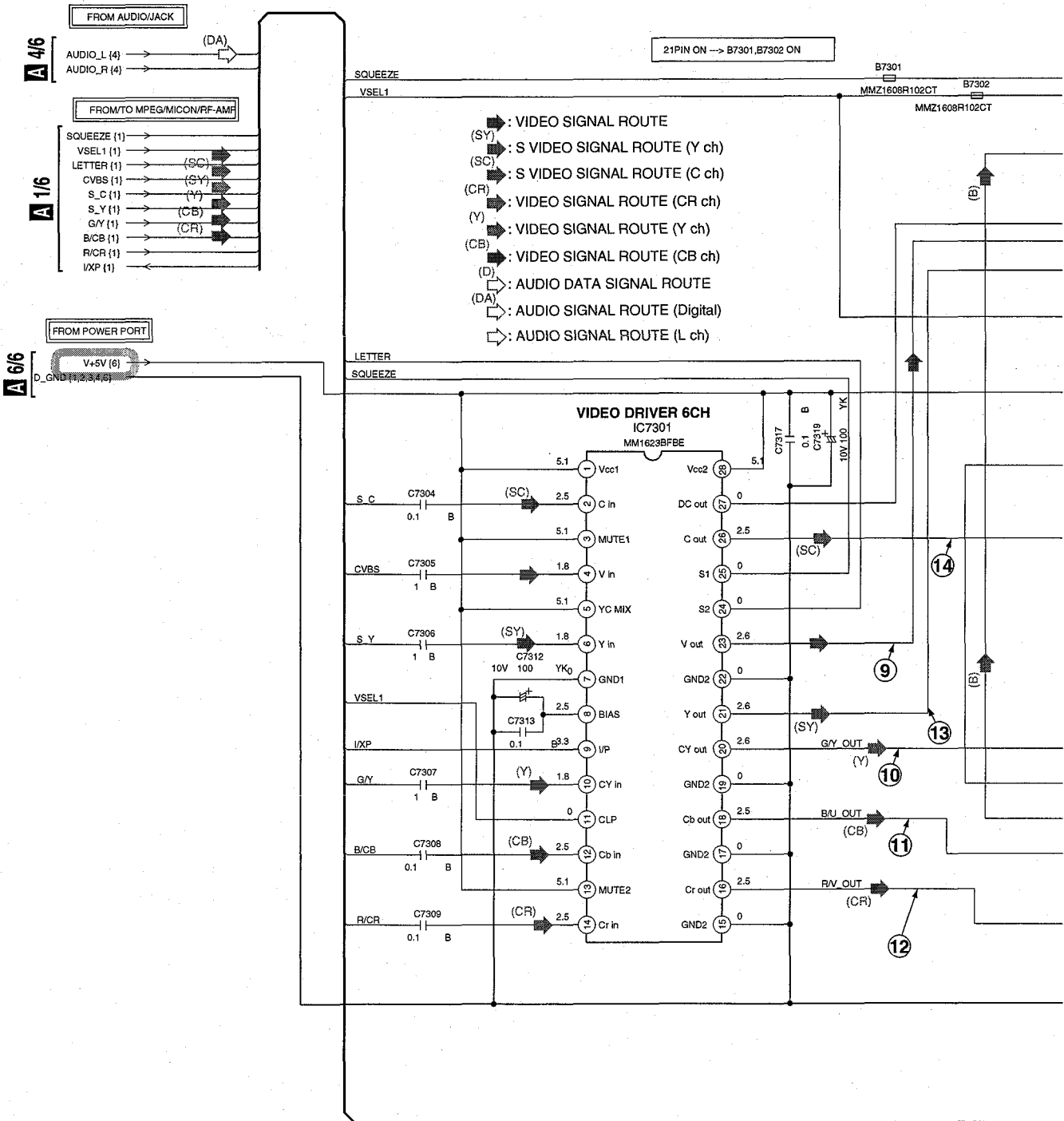
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR



### 3.7 DVD MT PCB (5/6) ASSY

#### A 5/6 DVD MT PCB ASSY (A2G604A130) • VIDEO SEC BLOCK



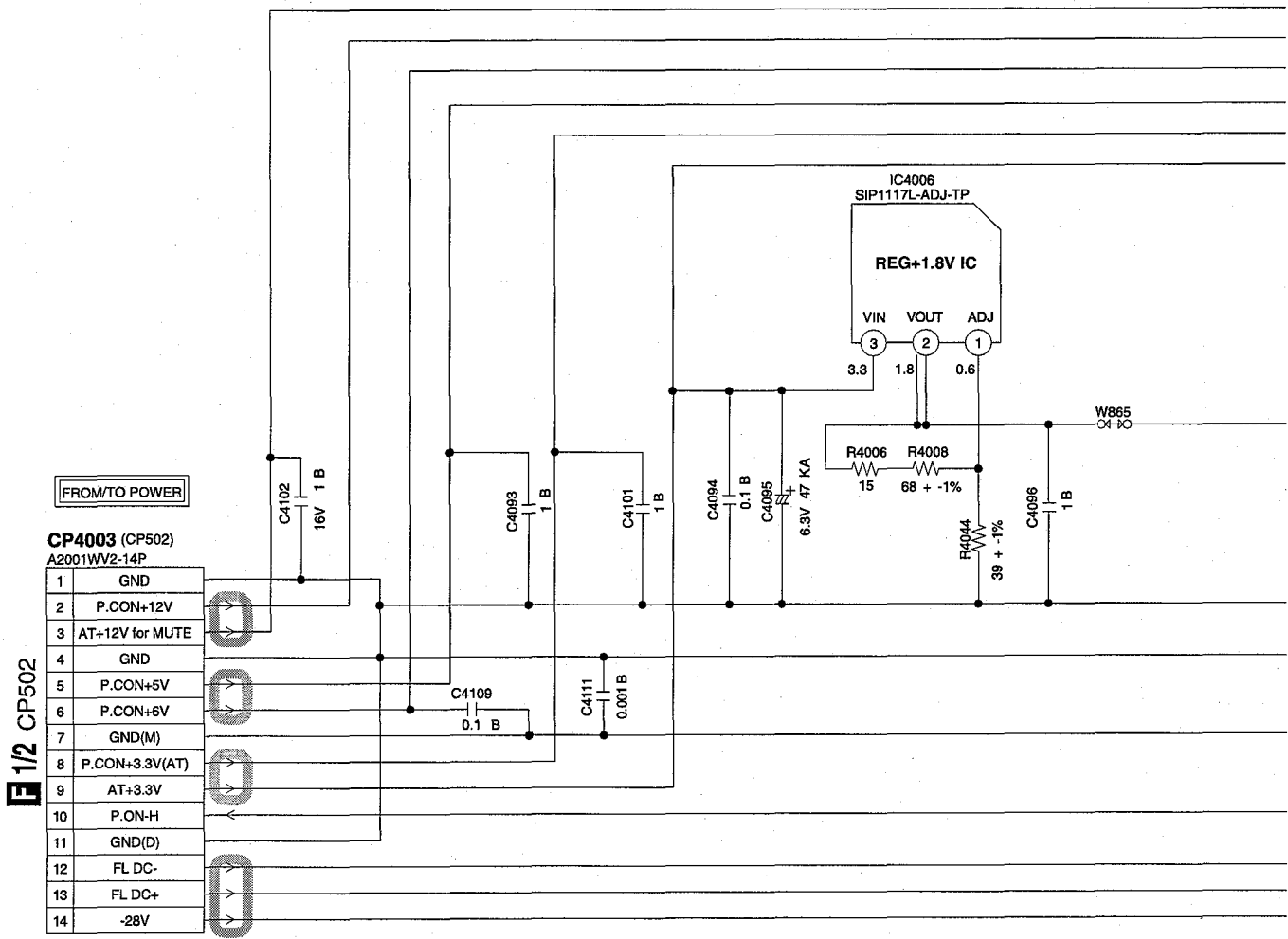
A 5/6

DV-585A-S



# 3.8 DVD MT PCB (6/6) ASSY

## A 6/6 DVD MT PCB ASSY (A2G604A130) • POWER PORT BLOCK



A

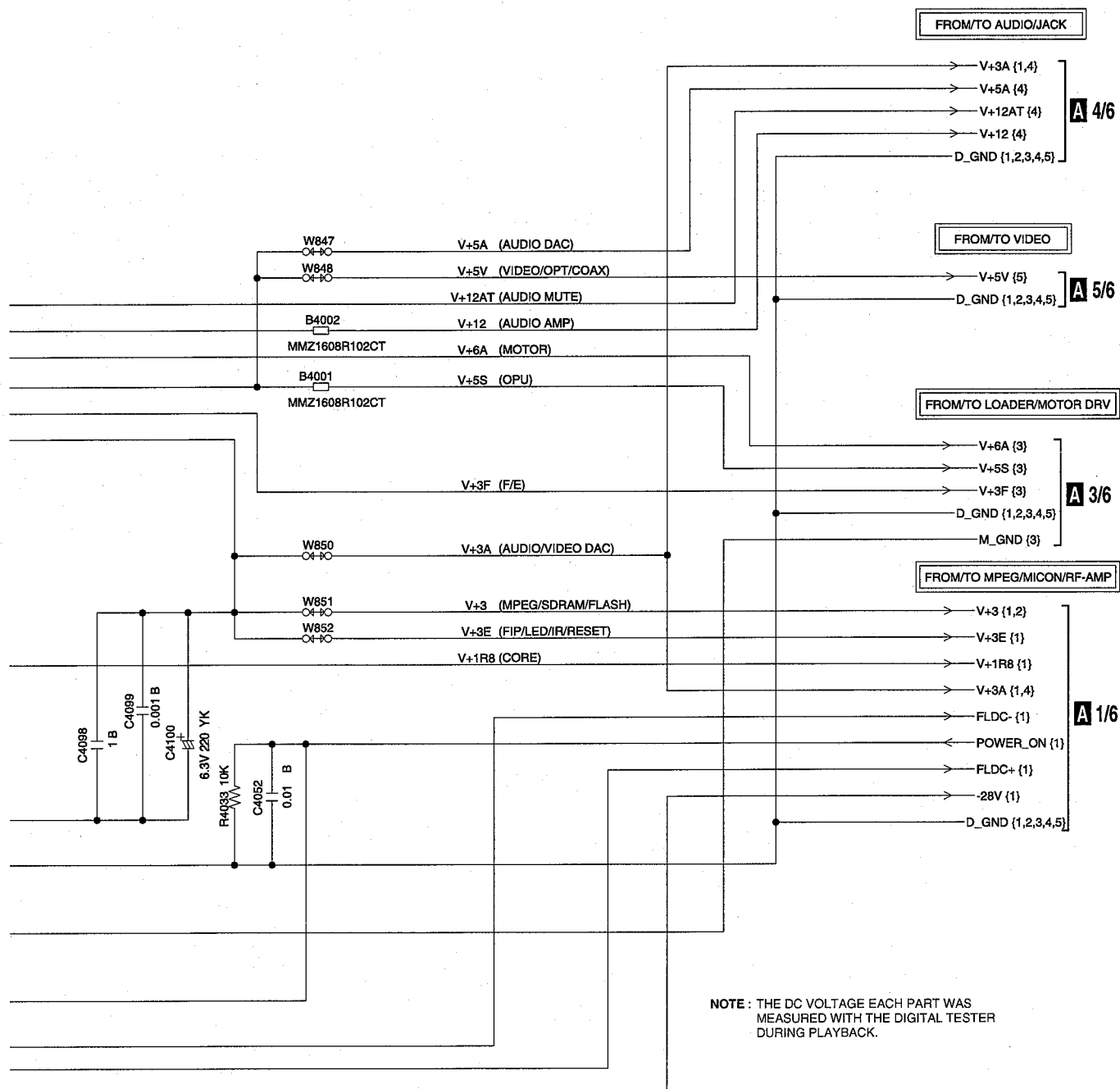
B

C

D

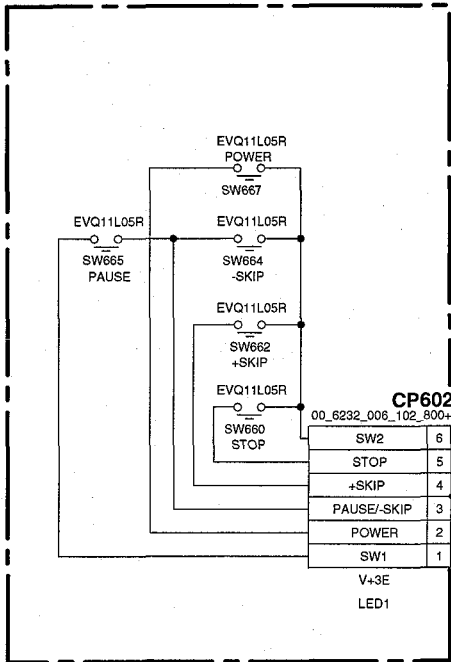
E

F



### 3.9 OPERATION and OPERATION 2 PCB ASSYS

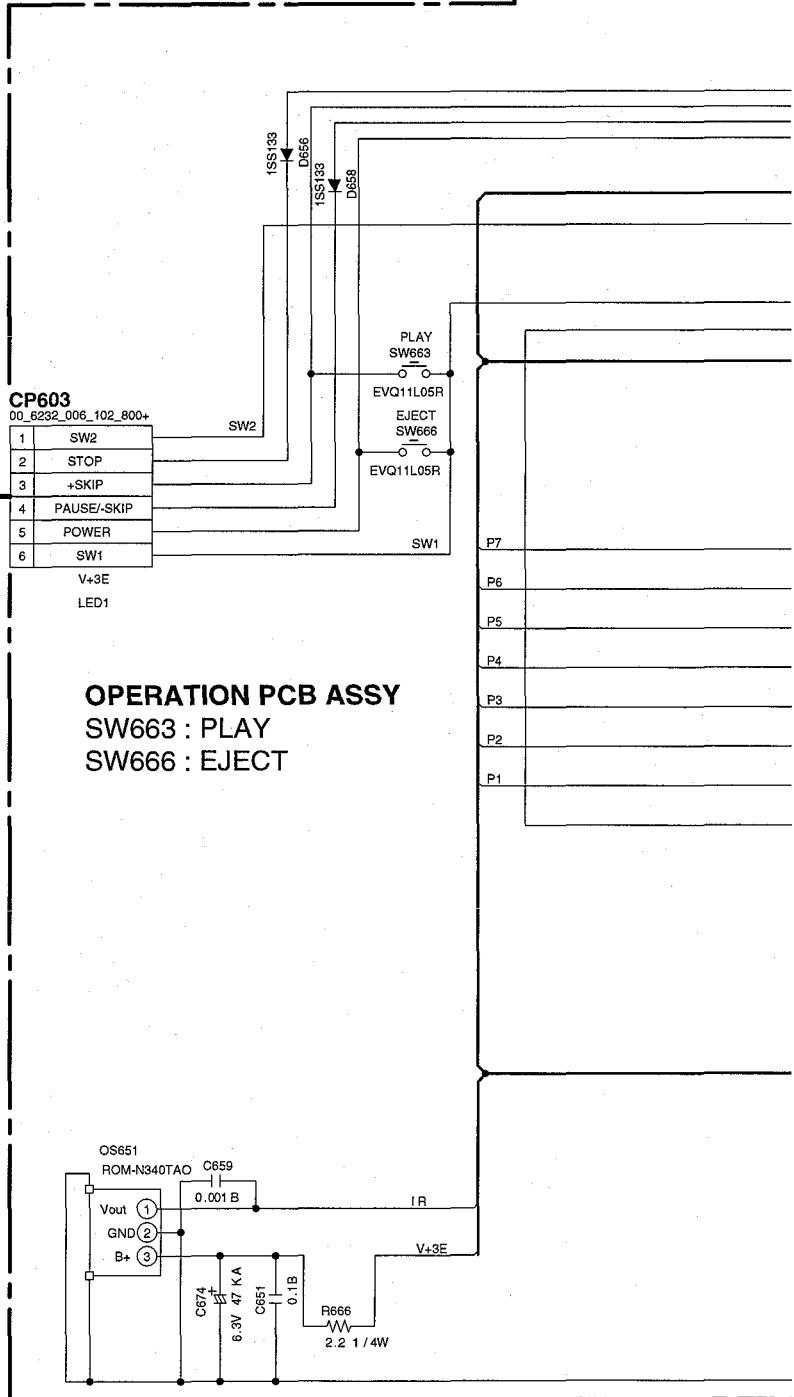
**C** OPERATION 2 PCB ASSY  
(A2G502A280)



**OPERATION 2 PCB ASSY**

SW660 : STOP  
SW662 : +SKIP  
SW664 : - SKIP  
SW665 : PAUSE  
SW667 : POWER

**B** OPERATION PCB ASSY  
(A2G604A270)

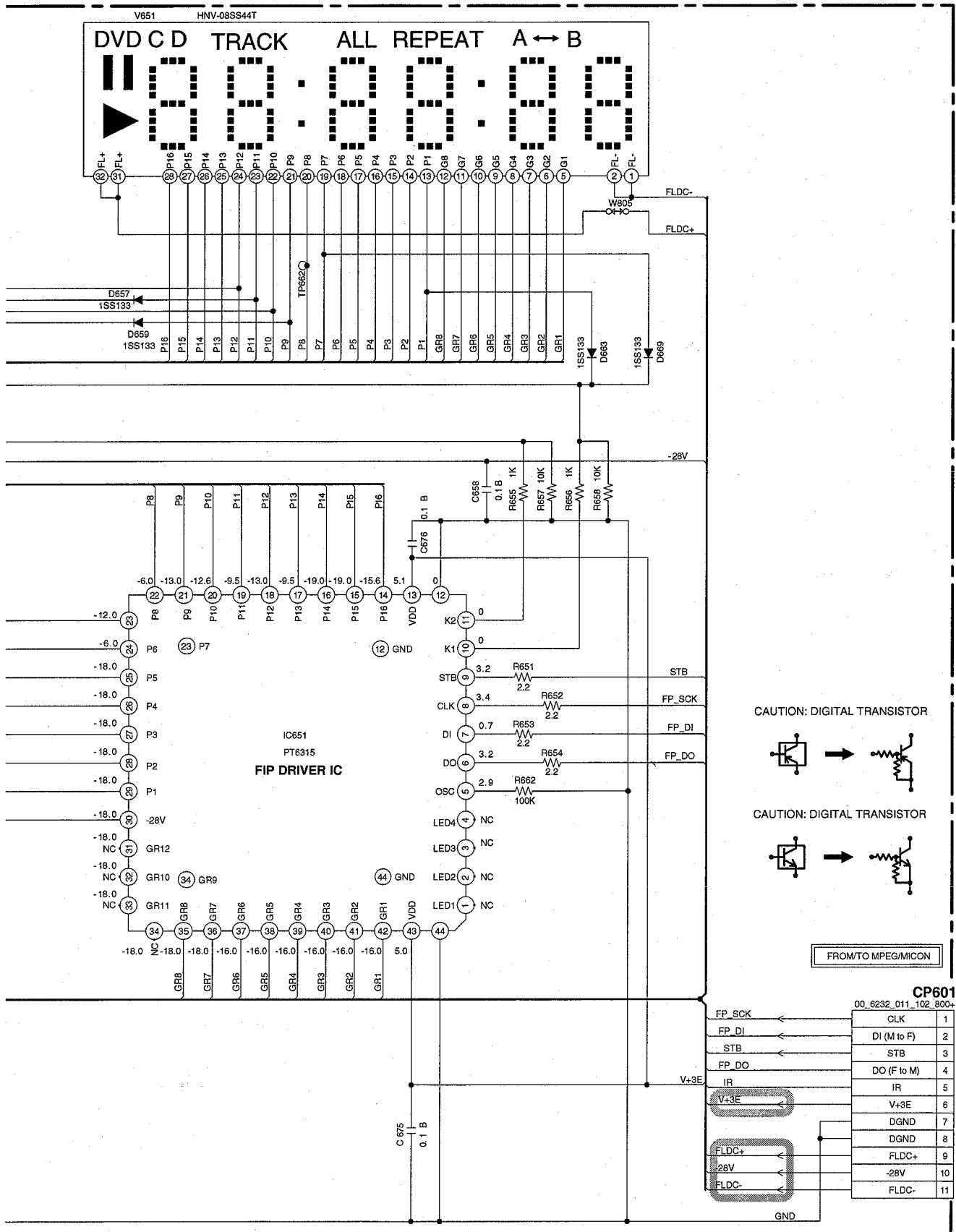


**OPERATION PCB ASSY**

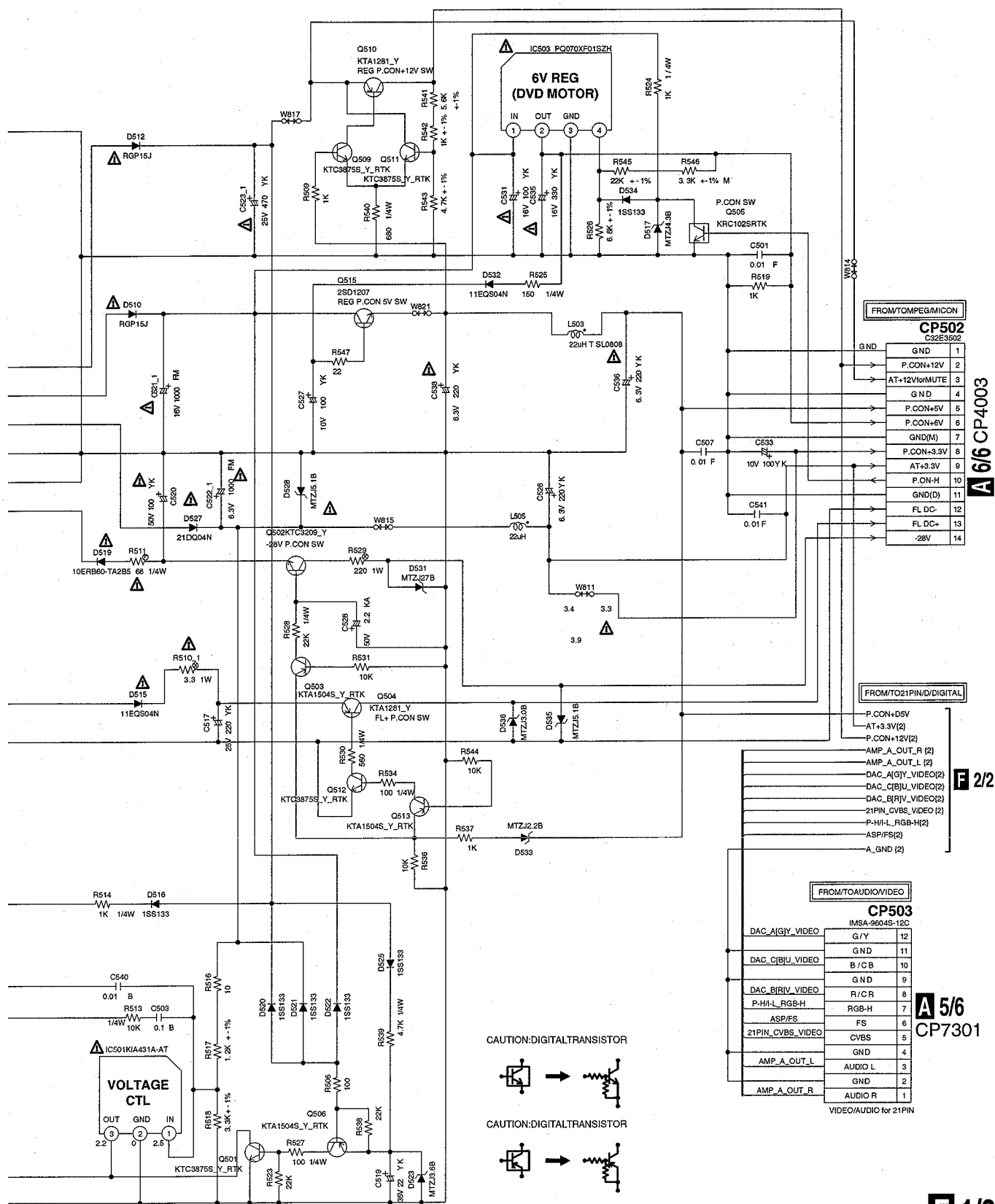
SW663 : PLAY  
SW666 : EJECT

**B C**





**F 1/2**



### 3.11 POWER PCB (2/2) ASSY

#### A **F 2/2** POWER PCB ASSY (A2G604A240) ● 21PIN/D/DIGITAL AUDIO BLOCK

- ➡ : VIDEO SIGNAL ROUTE
- (R) ➡ : VIDEO SIGNAL ROUTE (R ch)
- (G) ➡ : VIDEO SIGNAL ROUTE (G ch)
- (B) ➡ : VIDEO SIGNAL ROUTE (B ch)
- ⇨ : AUDIO SIGNAL ROUTE (L ch)
- (DA) ⇨ : AUDIO SIGNAL ROUTE (Digital)

CAUTION : DIGITAL TRANSISTOR

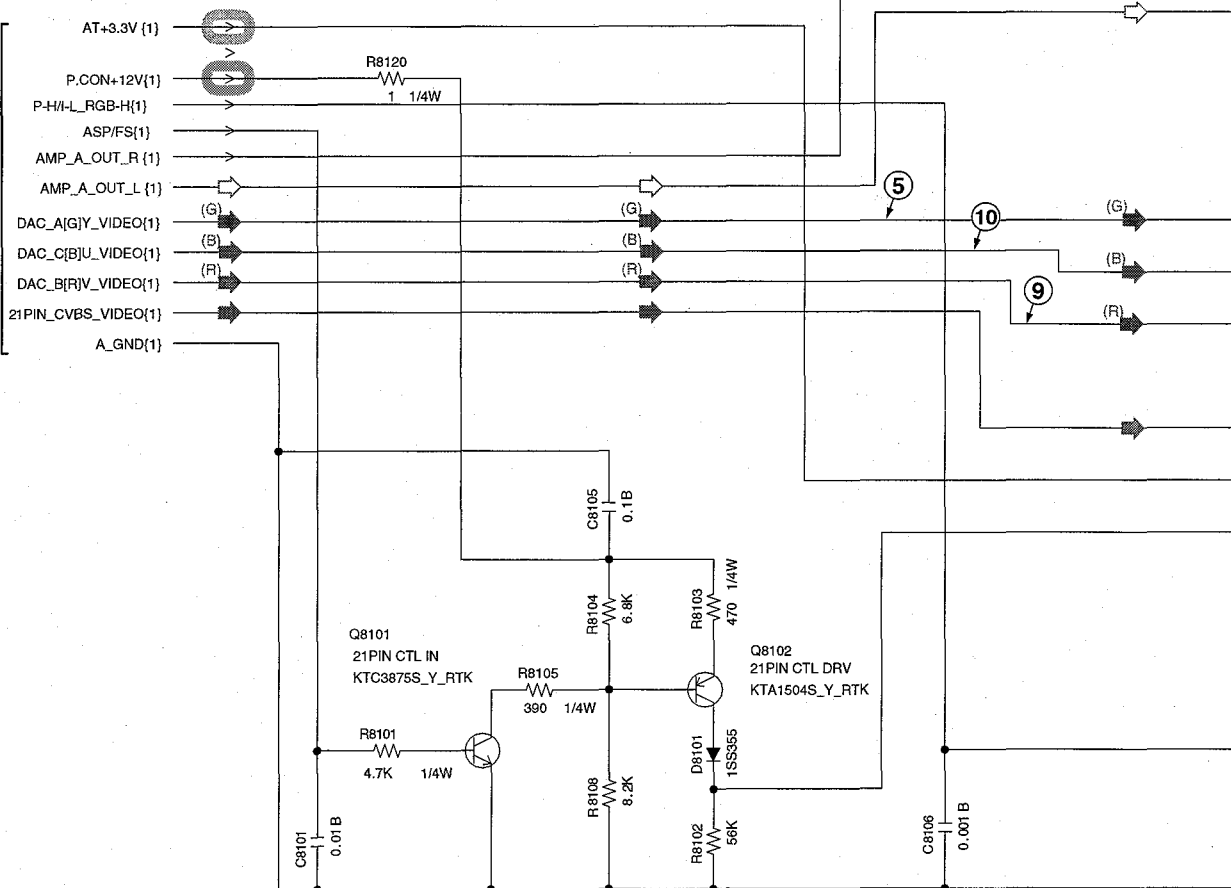
CAUTION : DIGITAL TRANSISTOR

FROM/TO POWER

**F 1/2** [ P.CON+D5V {1} ]

MMZ1608R102CT

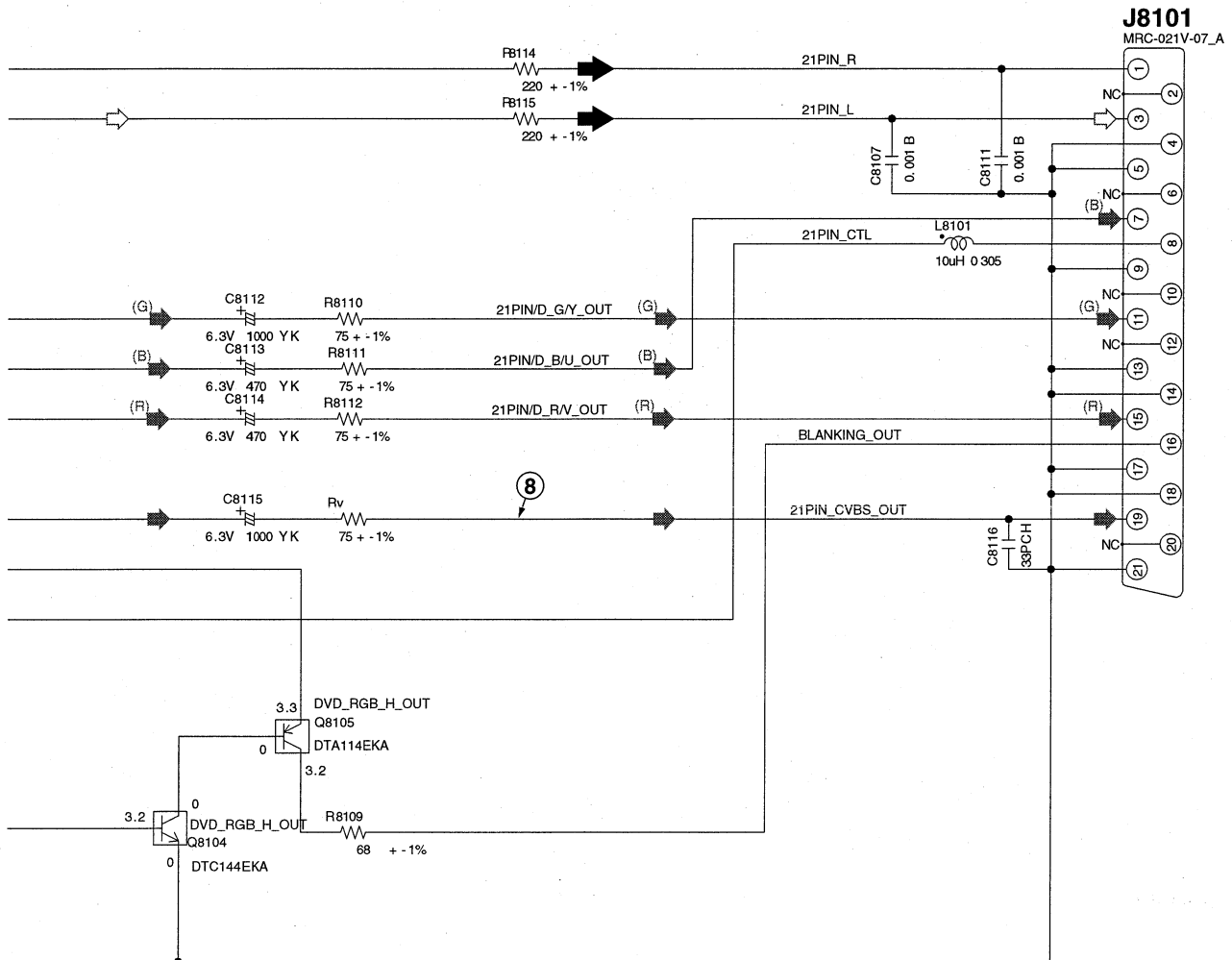
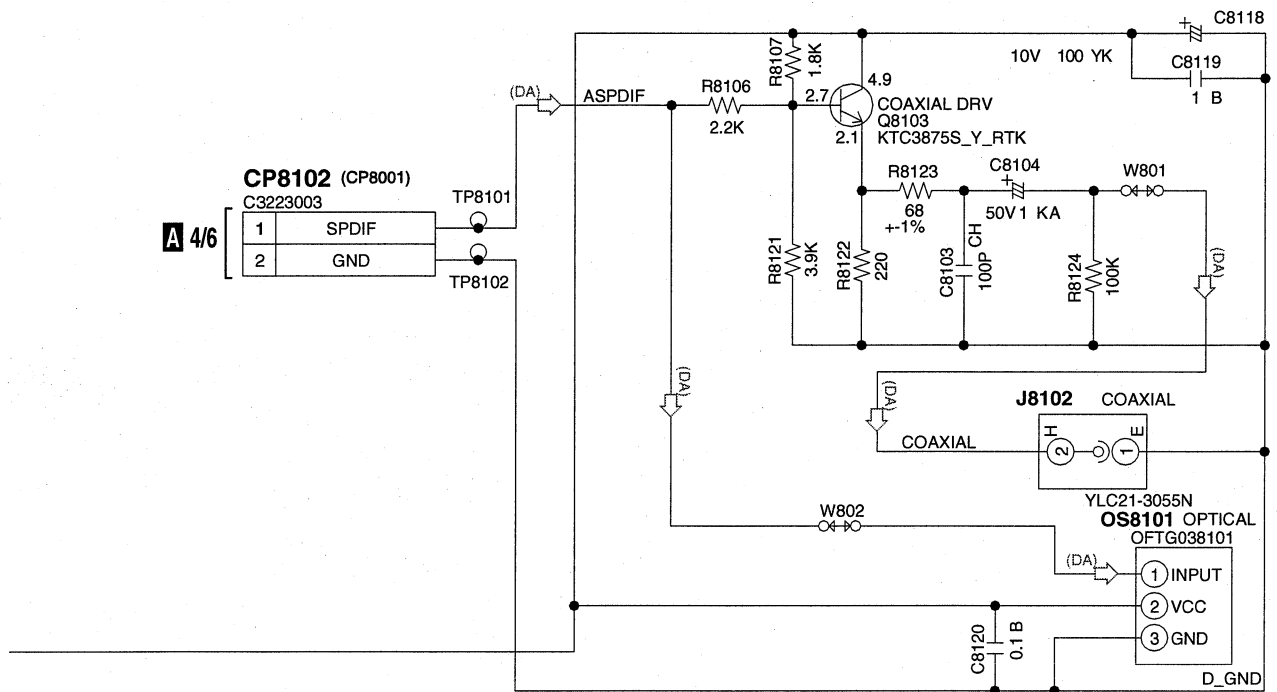
**F 1/2**



**F 2/2**

32

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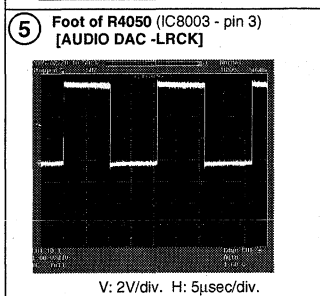
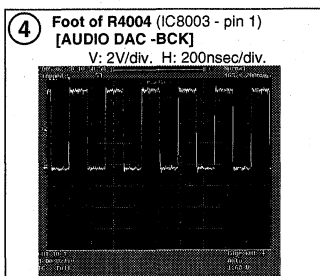
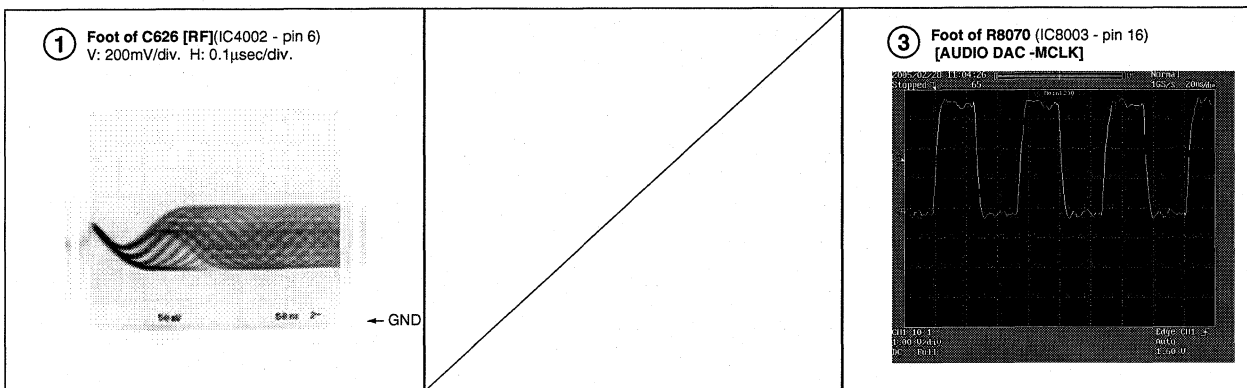


## 3.12 WAVEFORMS

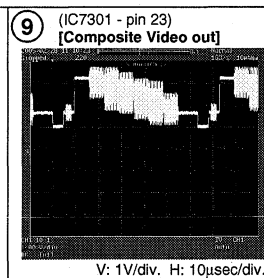
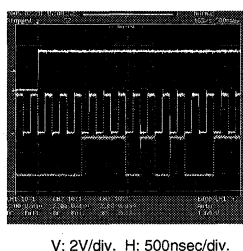
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition : No. 1 to 2 and 9 to 14 : reference A1 (DVD), T2-chp 19, Color-bar  
No. 3 to 8 : reference A1 (DVD), T2-chp 1

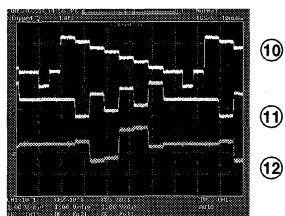
### A DVD MT PCB ASSY



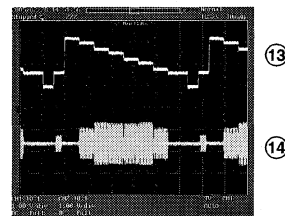
- ⑥ Foot of R4050 (IC8003 - pin 3)**  
[AUDIO DAC-LRCK]
- ⑦ Foot of R8047 (IC8003 - pin 1)**  
[AUDIO DAC-BCK]
- ⑧ Foot of R4043 (IC8003 - pin 2)**  
[AUDIO DAC-DATA]  
(Waveform of DATA is unsettled.)



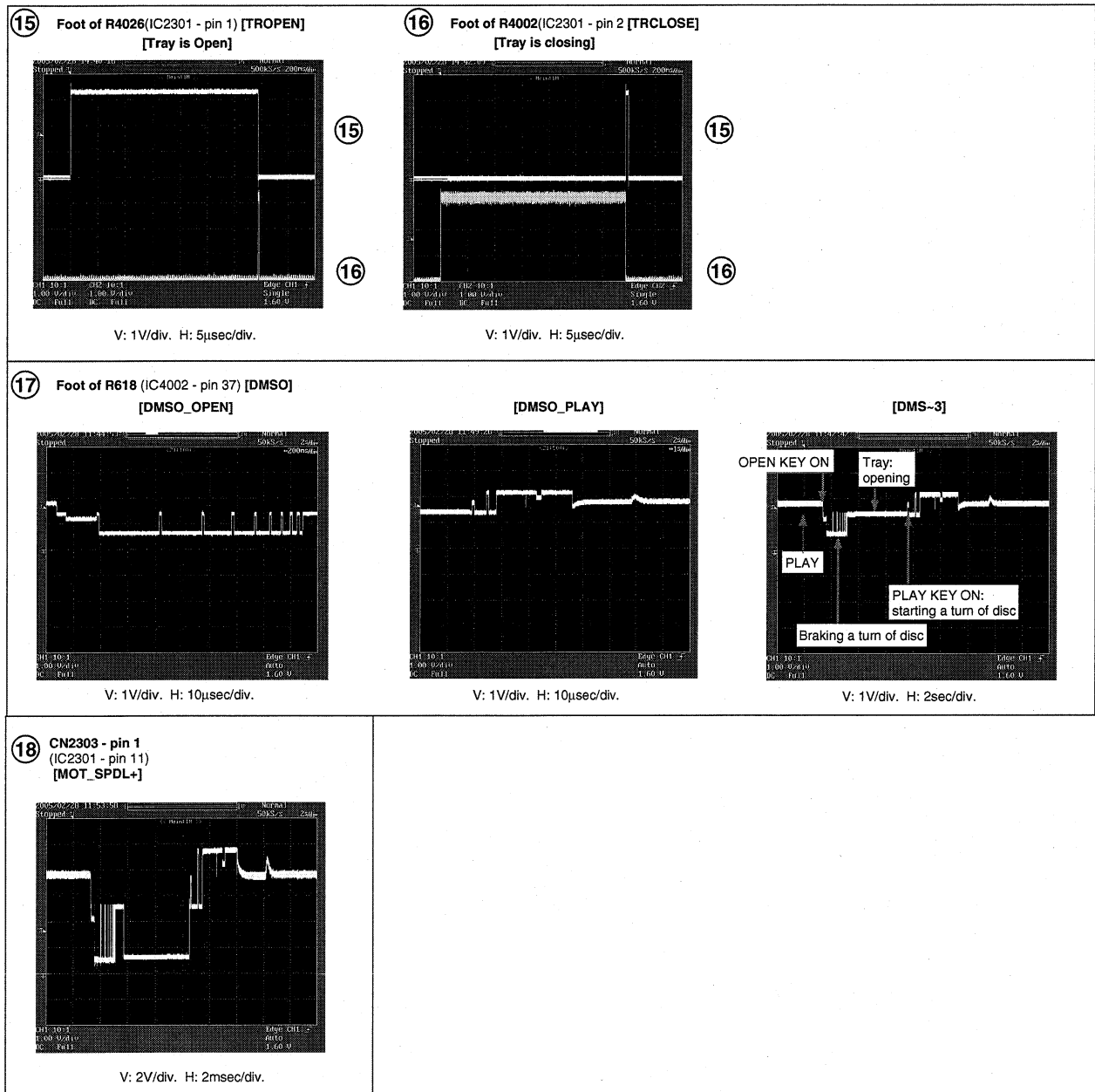
- ⑩ (IC7301 - pin 20)**  
[Component Video out-Y]  
V: 1V/div. H: 10μsec/div.
- ⑪ (IC7301 - pin 18)**  
[Component Video out-Pb]  
V: 2V/div. H: 10μsec/div.
- ⑫ (IC7301 - pin 16)**  
[Component Video out-Pr]  
V: 2V/div. H: 10μsec/div.



- ⑬ (IC7301 - pin 21)**  
[S Video out-Y]  
V: 1V/div. H: 10μsec/div.
- ⑭ (IC7301 - pin 26)**  
[S Video out-C]  
V: 1V/div. H: 10μsec/div.



# A DVD MT PCB ASSY



■ 1 ■ 2 ■ 3 ■ 4 ■

A

■

B

■

C

■

D

■

E

■

F

36

■ 1 ■ 2 DV-585A-S 3 ■ 4 ■



## 4. PCB CONNECTION DIAGRAM

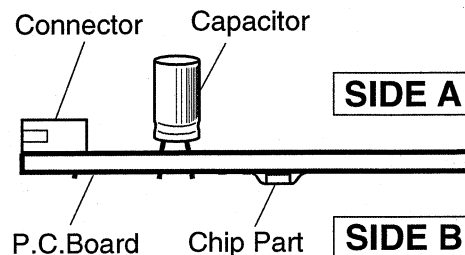
### 4.1 LOADING and SW PCB ASSYS

#### NOTE FOR PCB DIAGRAMS :

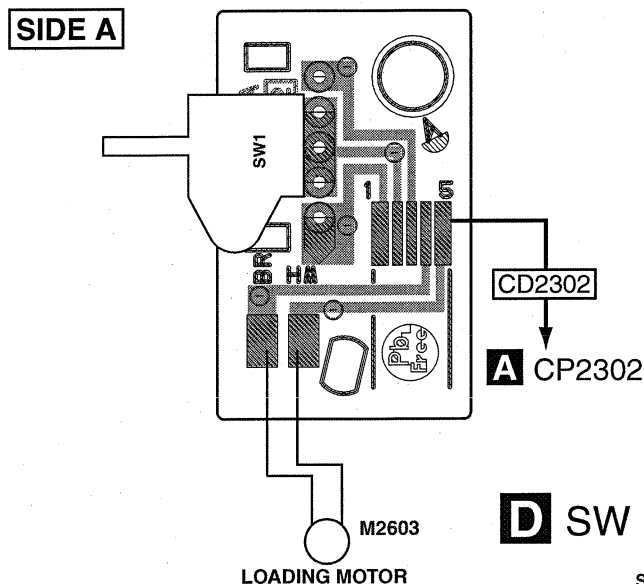
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

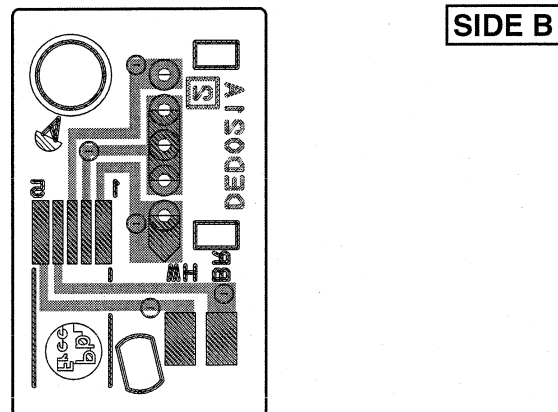
3. The parts mounted on this PCB include all necessary parts for several destinations.
- For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



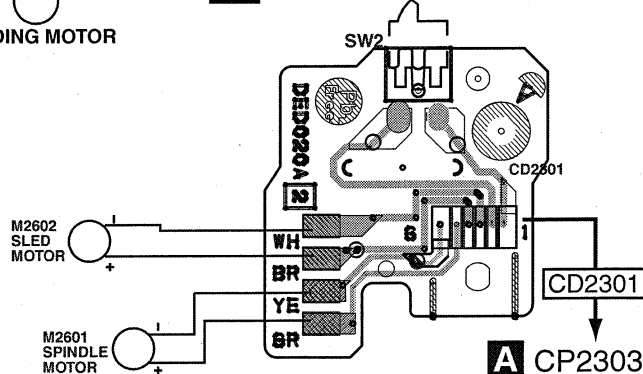
#### **E** LOADING MOTOR PCB ASSY (INSERTED PARTS)



#### **E** LOADING MOTOR PCB ASSY (CHIP MOUNTED PARTS)

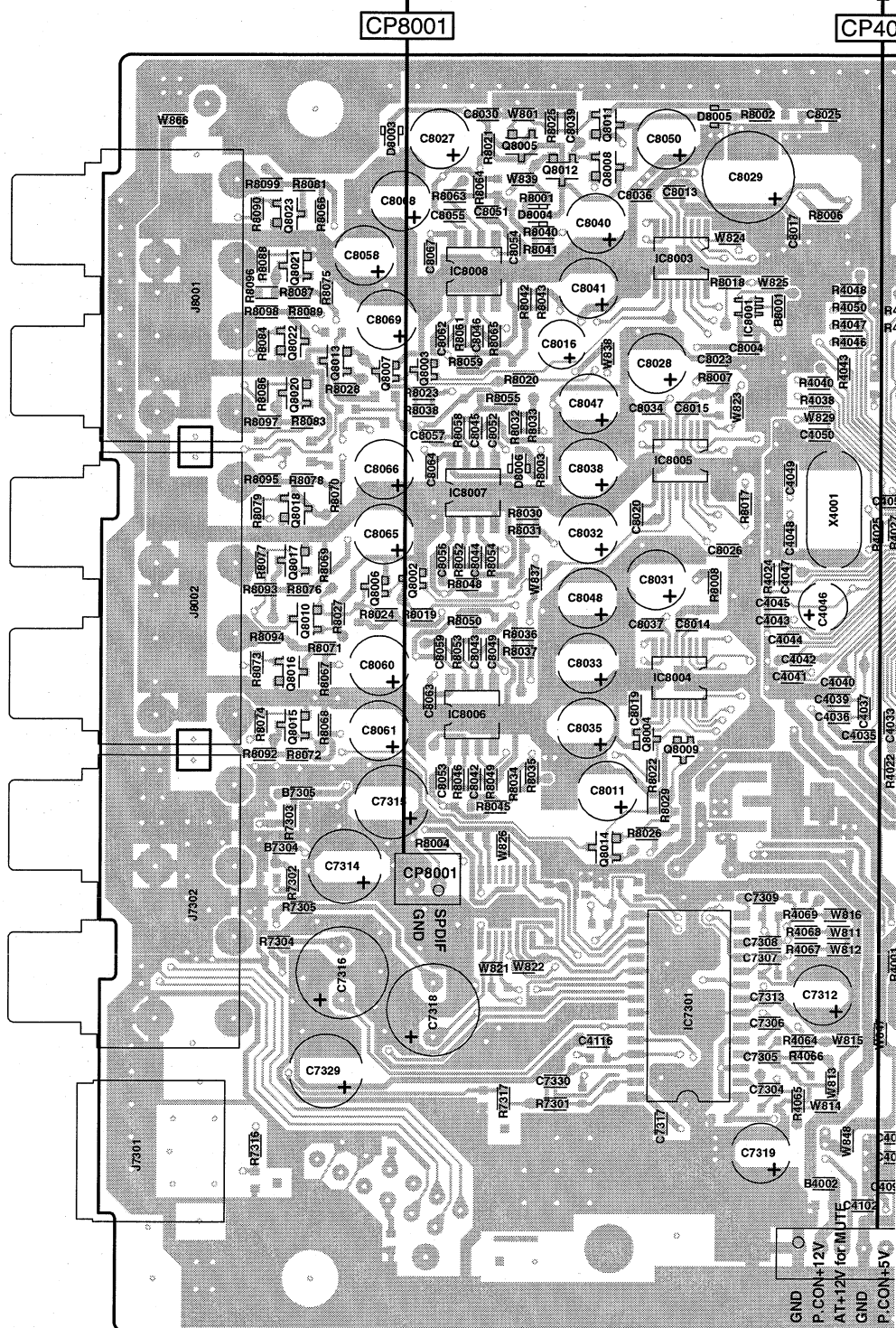


#### **D** SW PCB ASSY



**D E**

**D E**

**SIDE A****F** CP503**F** CP5

GND  
P.CON  
AT+12  
GND  
P.CON

Q8023-Q8020	Q8013	Q8007	Q8003	Q8005	Q8008	Q8011	IC8005	IC8003
Q8017-Q8018		Q8006	Q8002	IC8008	IC8012	Q8014	IC8004	
Q8010				IC8007		IC8002	Q8004	Q8009
Q8015-Q8016				IC8006				IC7301

DV-585A-S



1

2

3

4

SIDE B

A

**A** DVD MT PCB ASSY

B

C

D

E

F

CP4002

CP2302

CP2303

CP2301

CP4003

**A**

40

1

2

3

4

DV-585A-S



5

6

7

8

SIDE B

A

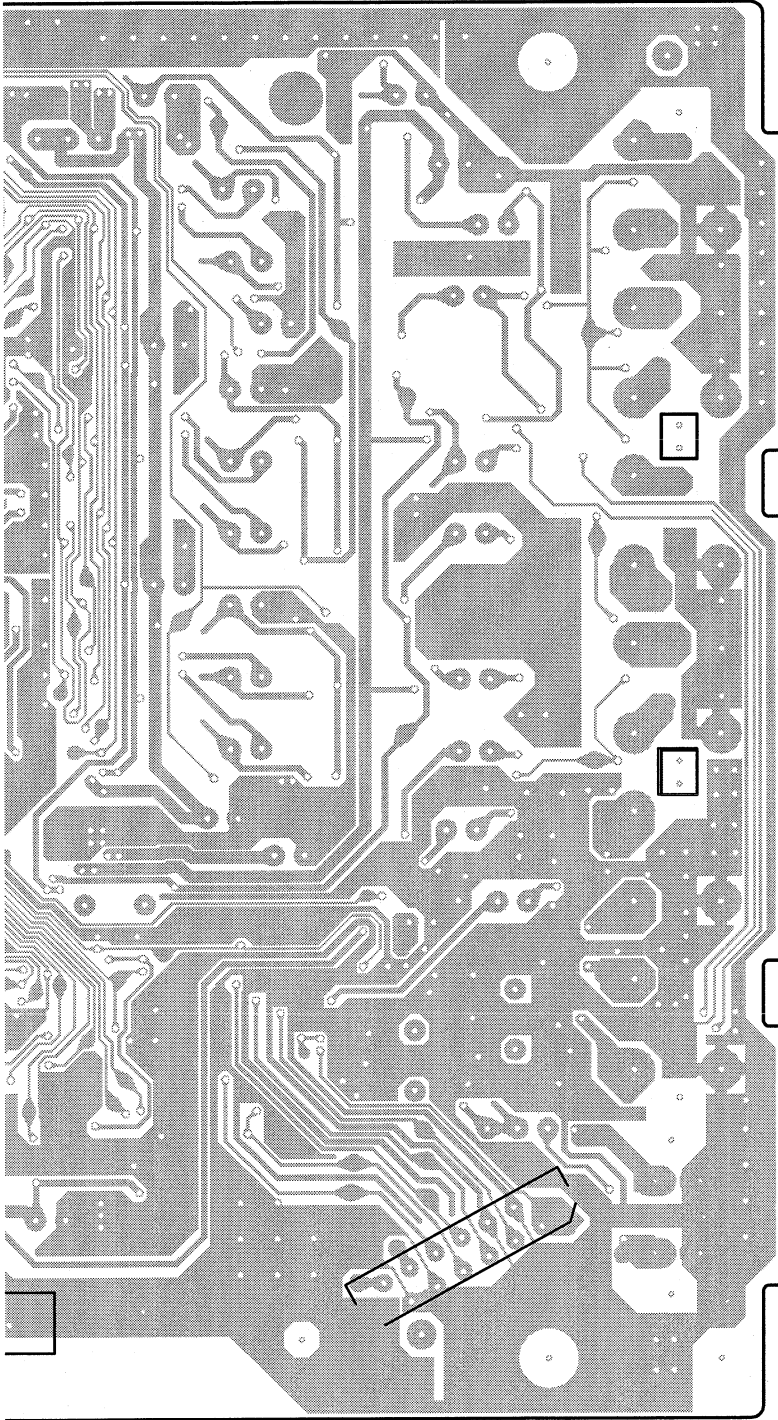
B

C

D

E

F



CP8001

A

41

5

6

7

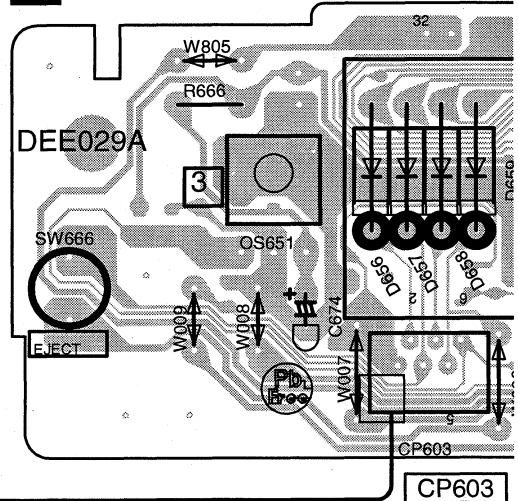
8

DV-585A-S

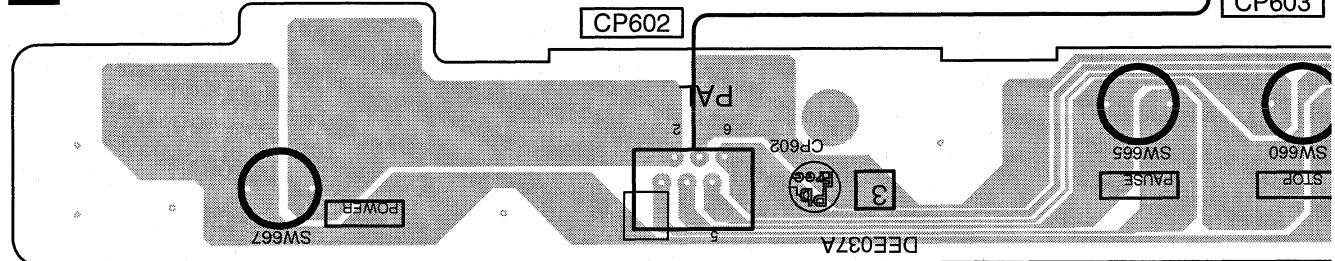
# 1 2 3 4 4.3 OPERATION and OPERATION 2 PCB ASSYS

**SIDE A**

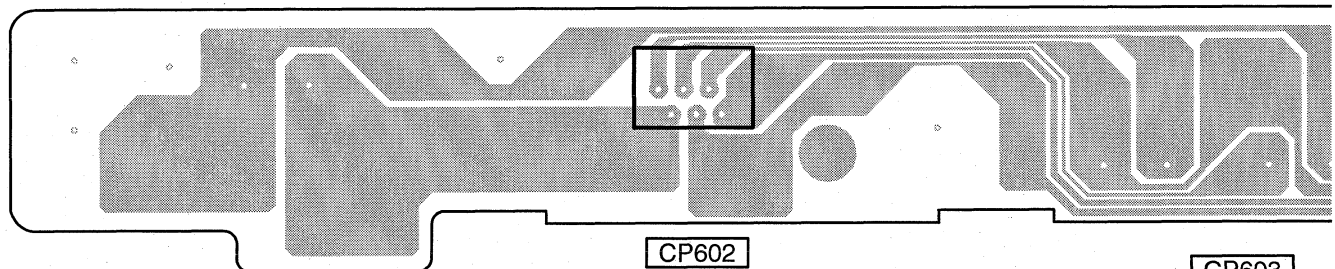
**B** OPERATION PCB ASSY



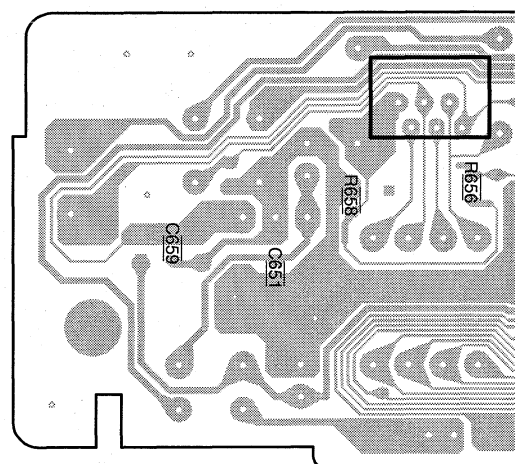
**C** OPERATION 2 PCB ASSY



**SIDE B**



**C** OPERATION 2 PCB ASSY

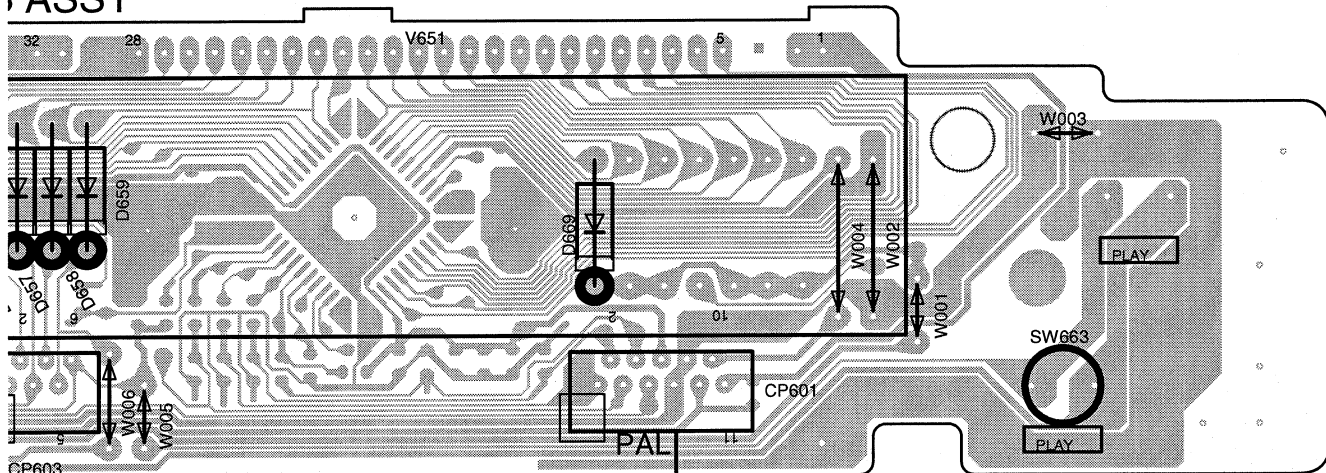


**B** OPERATION PCB ASSY

**B C**

ASSY

SIDE A



A

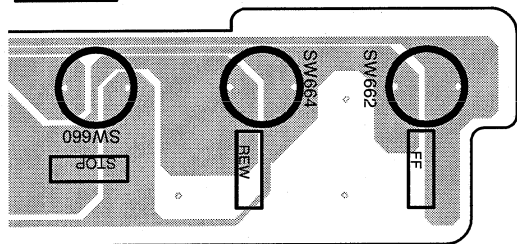
B

C

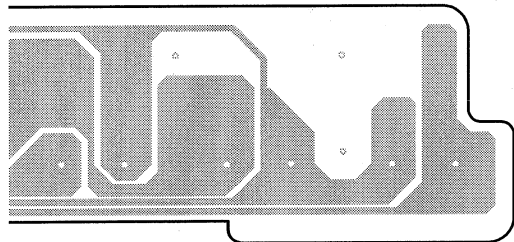
CP603

CP601

A CP4002



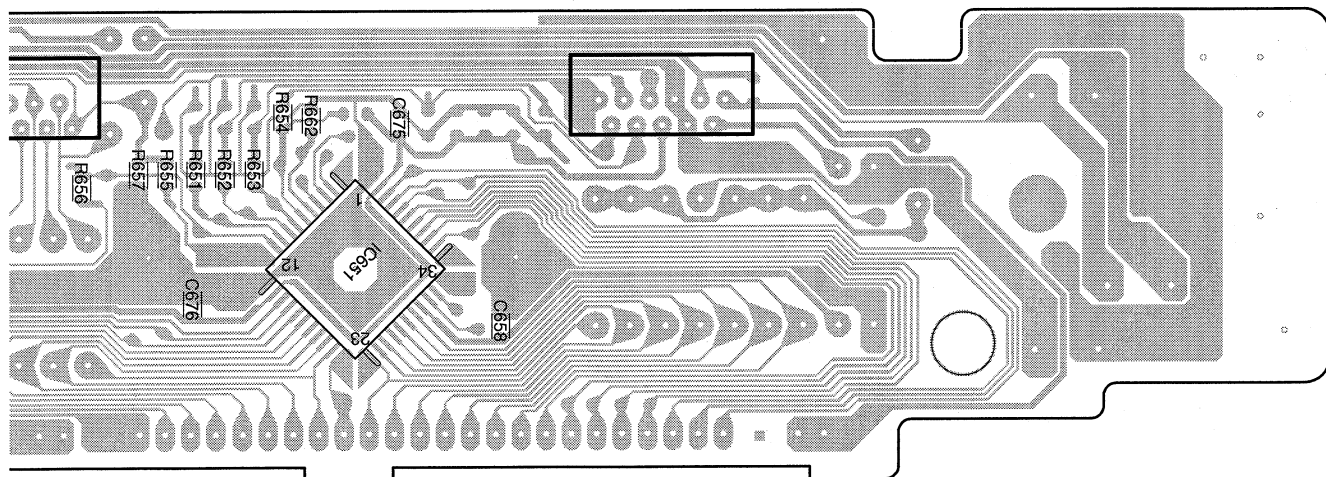
SIDE B



D

CP603

CP601



E

F

ASSY

IC651

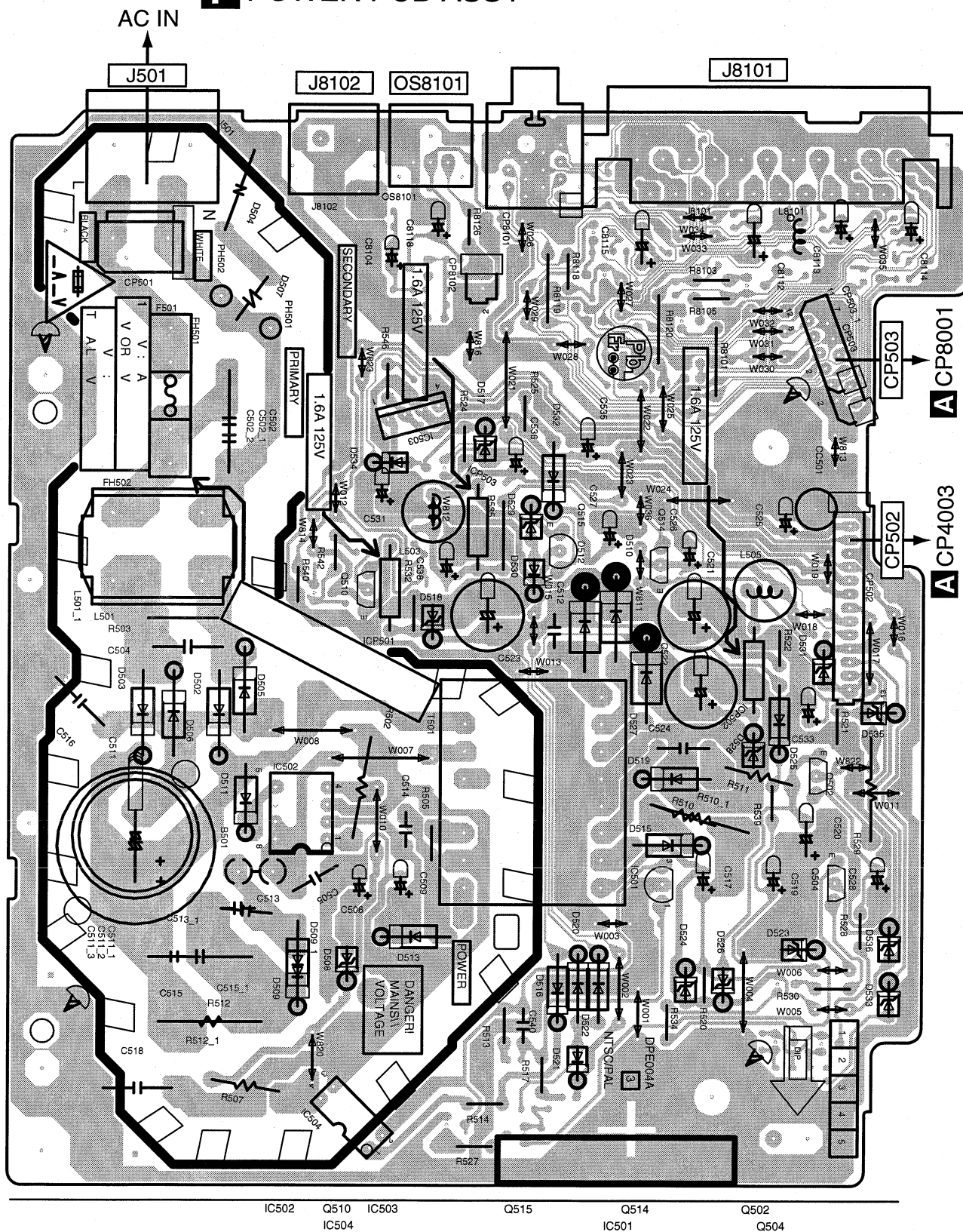
DV-585A-S

B C

# 4.4 POWER PCB ASSY

SIDE A

POWER PCB ASSY

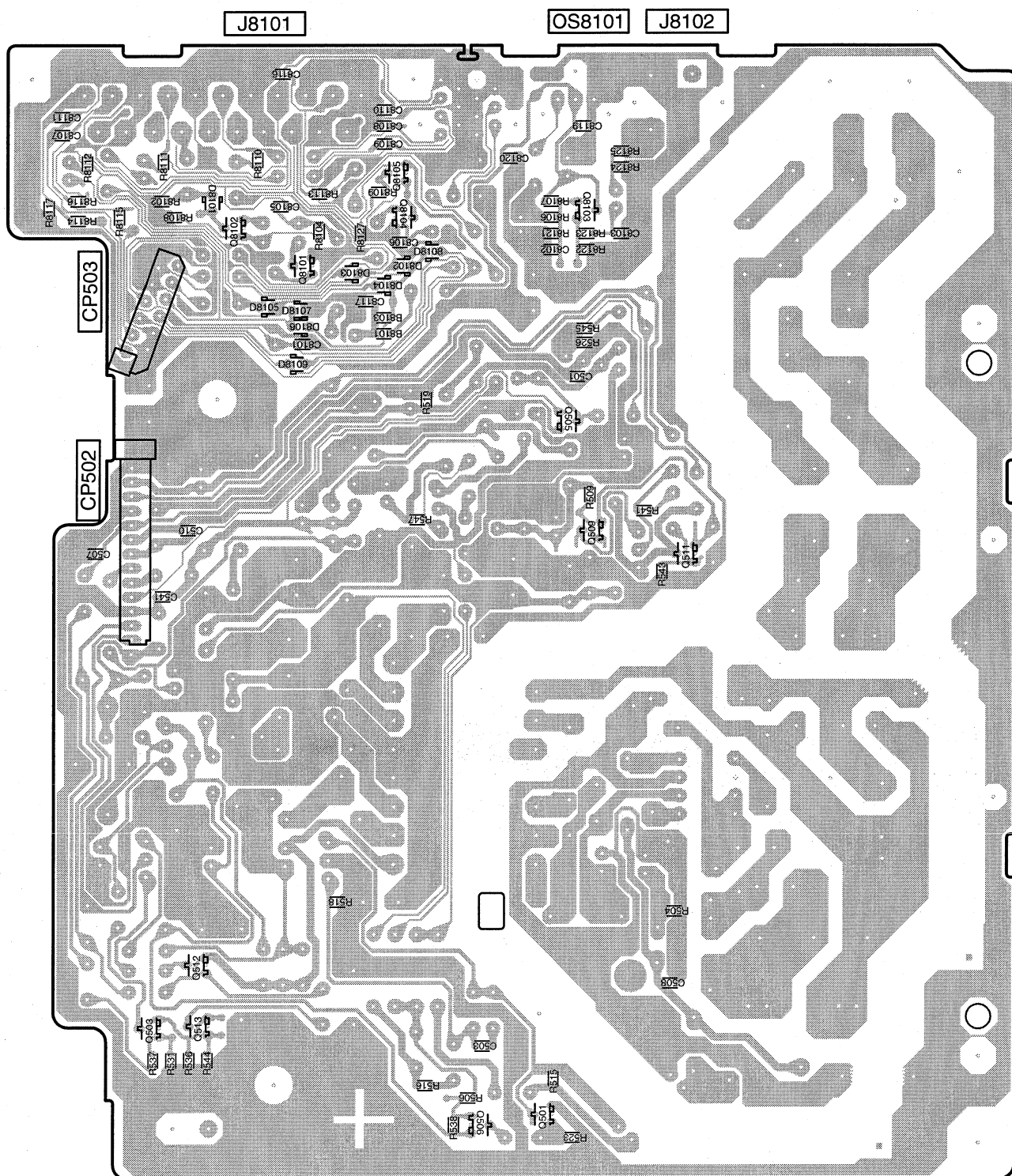


F

DV-585A-S



SIDE B

**F** POWER PCB ASSY

# 5. PCB PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

● The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

● When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560  $\Omega$   $\rightarrow$  56  $\times 10^1$   $\rightarrow$  561 ..... RD1/4PU561J  
 47k  $\Omega$   $\rightarrow$  47  $\times 10^3$   $\rightarrow$  473 ..... RD1/4PU473J  
 0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H R50K  
 1  $\Omega$   $\rightarrow$  1R0 ..... RS1P 1R0K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$   $\rightarrow$  562  $\times 10^1$   $\rightarrow$  5621 ..... RN1/4PC5621F

## Mark No. Description Part No.

### LIST OF ASSEMBLIES

1..DVD MT PCB ASSY	A2G604A130
1..OPERATION PCB ASSY	A2G604A270
1..OPERATION 2 PCB ASSY	A2G502A280
1..POWER PCB ASSY	A2G604A240
1..DVD MECHA ASSY	A2G512A650
2..LOADING PCB ASSY	A2F101A610
2..SW PCB ASSY	A2F101A640

## Mark No. Description Part No.

### OTHERS

CP2301 CONNECTOR PCB SIDE	069GYOT119
CP2302 CONNECTOR PCB SIDE	069EV53030
CP2303 CONNECTOR PCB SIDE	069EV63030
CP4002 CONNECTOR PCB SIDE	069EV3030
CP4003 CONNECTOR PCB SIDE	069S2E0629
CP7301 CONNECTOR PCB SIDE	069J7C0599
CP8001 CONNECTOR PCB SIDE	069S220629
J7302 RCA JACK	060J451008
J7301 JACK	063D700008
J8001 RCA JACK	060J451007
J8002 RCA JACK	060J411039
OS8001 OPTICAL(OFTG038101)	07AQ000009
CD601 CORD JUMPER	122H0B1002
CD8001 CORD JUMPER	122HOC3001

## Mark No. Description Part No.

### A DVD MT PCB ASSY

#### SEMICONDUCTORS

IC4002 (MT1389EE/B2-L)	MT1389EE/B2-L-K
IC4001 (BR24L16FJ-WE2)	I57F04L160
IC2301 (LA6565-TE)	I03F065650
IC4003 (BD5229G-TR)	I97F052290
IC4004 (S29AL016D70TF1020)	S2G602AF01

### B OPERATION PCB ASSY

#### SEMICONDUCTORS

IC651 IC PT6315	PT6315
D656 1SS133T-77	D1VT001330
D657 1SS133T-77	D1VT001330
D658 1SS133T-77	D1VT001330
D659 1SS133T-77	D1VT001330

D663 1SS133T-77	D1VT001330
D669 1SS133T-77	D1VT001330

#### SWITCHES AND RELAYS

SW663 SWITCH TACT	0504R01T38
SW666 SWITCH TACT	0504R01T38

#### OTHERS

V651 TUBE FLUORESCENT	VAW1077
CP601 CONNECTOR PCB SIDE	069EV3030
CP603 CONNECTOR PCB SIDE	069EV63050
OS651 REMOTE RECEIVER	077A040001
CD603 CORD JUMPER	122H062801

### C OPERATION 2 PCB ASSY

#### SWITCHES AND RELAYS

SW660 SWITCH TACT	0504R01T38
SW662 SWITCH TACT	0504R01T38
SW664 SWITCH TACT	0504R01T38
SW665 SWITCH TACT	0504R01T38
SW667 SWITCH TACT	0504R01T38

#### OTHERS

CP602 CONNECTOR PCB SIDE	069EV63050
--------------------------	------------

#### COILS AND FILTERS

B4001, B4002, B4008 (CHIP BEADS) (CHIP BEADS: MMZ1608R102CT)	0246C51024
B8001, B7304- B7305 (CHIP BEADS) (CHIP BEADS: MMZ1608R102CT)	0246C51024
X4001 CRYSTAL (27MHz)	100BT02701

#### RESISTORS

NR4001, NR4002 (R, NETWORK)	110P43330M4
-----------------------------	-------------

5	6	7	8
Mark No.	Description	Part No.	

## F POWER PCB ASSY

### RESISTORS

△ R511	FUSE, Resistor	R65584680J
--------	----------------	------------

### OTHERS

CP502	CONNECTOR PCB SIDE	06C32E3504
CP503	CONNECTOR	069J7C0599
J8101	SOCKET, 21 PIN	063D100050
J8102	RCA JACK	060Q401115
OS8101	OPTICAL DRIVE	07AQ000009
CP8102	CONNECTOR PCB SIDE	06C3223003

## D SW PCB ASSY

There is no Service Parts

## E LOADING MOTOR PCB ASSY

There is no Service Parts

## 6. ADJUSTMENT

### 6.1 WHEN REPLACING DVD DECK

#### [ Removing the DVD Deck ]

Before removing Pick Up PCB and DVD PCB connector, short circuit the position shown in **Fig. 1** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

#### [ Installing the DVD Deck ]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

#### NOTE

- Before your operation, please read "PREPARATION OF SERVICING" .
- Use the Lead Free solder.
- Manual soldering conditions
  - Soldering temperature:  $320 \pm 20^{\circ}\text{C}$
  - Soldering time: Within 3 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to prevent the Flux smoke from it.

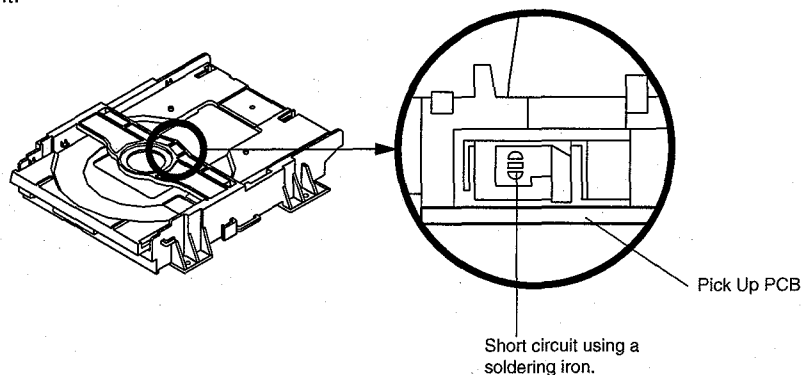
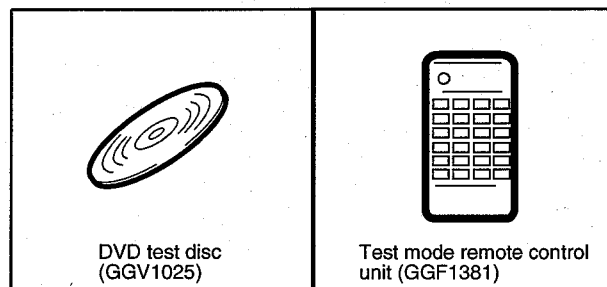
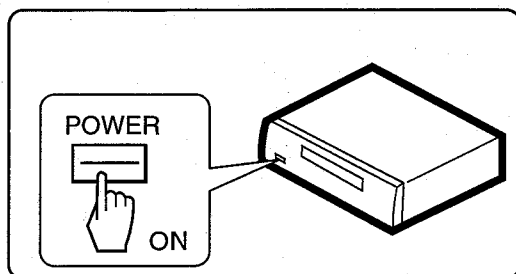


Fig. 1

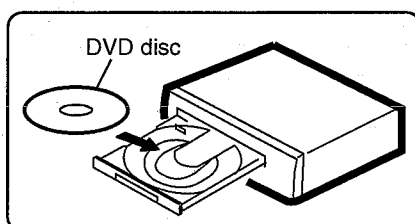
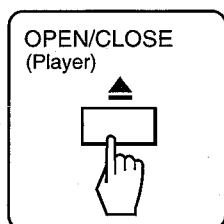
## 6.2 TEST MODE

### POWER ON

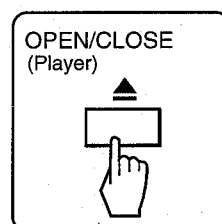


### DISC SET

#### <TRAY OPEN>

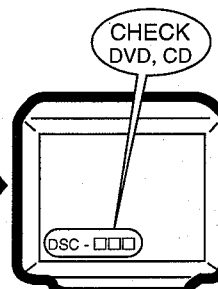
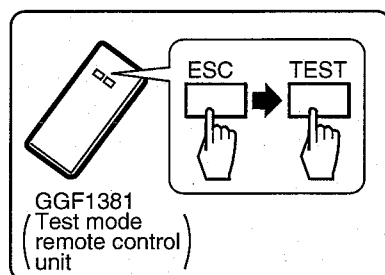
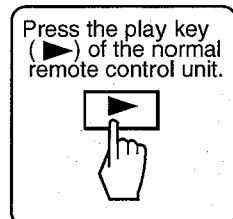


#### <TRAY CLOSE>

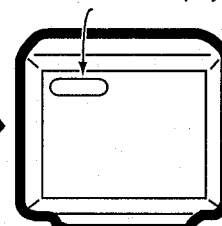


### TEST MODE: PLAY

#### <PLAY>



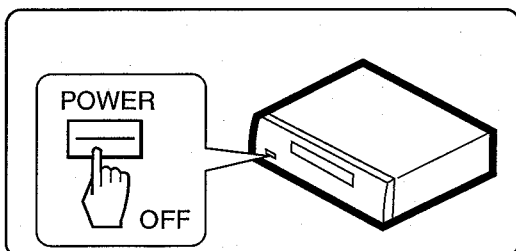
An address is displayed



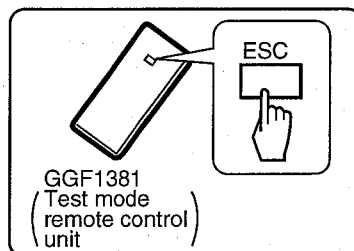
#### Notes:

- After going into test mode, if you play back the disc, "DISC-NON" is displayed.
- The video signal and the audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

### TEST MODE: OFF



OR



## 6.3 TEST MODE IN

### ■ Test Mode Functional Specification

#### A ① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light the all FL and LEDs.
- OSD displays test mode.

■ Note:

\* When pressing the keys of something, the FL displays "NO DISC" and the LED lighting disappears.

#### B ② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit.

#### ③ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).

CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

## 6.4 DISC REMOVAL METHOD

### DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet and Front Cabinet. (Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)
2. Rotate the Main Gear in the direction of the arrow by hand.  
(Refer to Fig. 1)
3. Draw the Tray.

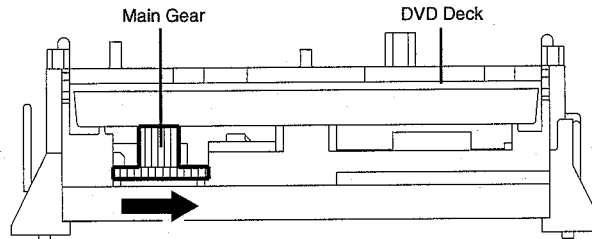


Fig. 1

### PARENTAL CONTROL - RATING LEVEL 4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Set the DVD to the Stand-by Mode.
2. Press and hold the 'STOP' key on the front panel.
3. Simultaneously press and hold the POWER key on the front panel.
4. The 4 digit password has now been cleared.

**NOTE:** The above procedure will reset ALL of the player's settings to the default factory state.

### PREPARATION OF SERVICING

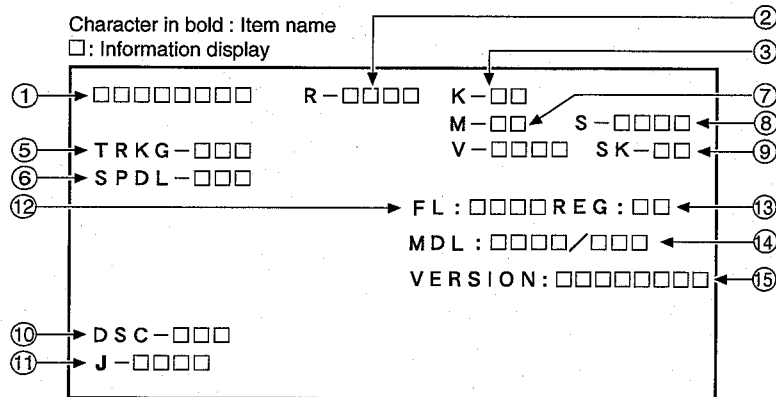
The laser diode used for a pickup head may be destroyed with external static electricity. Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, the life of the product may be shortened. Please perform the following measure against static electricity, be careful of destruction of a laser diode at the time of repair.

- Place the unit on a workstation equipped to protect against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

# 7. GENERAL INFORMATION

## 7.1 DIAGNOSIS

### 7.1.1 DISPLAY SPECIFICATION OF THE TEST MODE



#### ① Address indication

The address being traced is displayed in number.  
(as for the DVD, indication of decimal number is possible.)

DVD : ID indication (hexadecimal number, 8 digits)

[\*\*\*\*\*]

CD : ID indication [\*\*\*\*\*]

#### ② Code indication of remote control unit [R - \* \* \* \*]

In case of double code, display a 2nd code.

#### ③ Main unit keycode indication [K - \* \*]

#### ⑤ Tracking status [TRKG - \* \* \*]

Tracking on : [ON]

Tracking off : [OFF]

#### ⑥ Spindle status [SPDL - \* \* \*]

[OFF], [CLV]

#### ⑦ Mechanism (loading) position value [M - \* \*]

Unknown : [01] or [41]

Open state : [04]

Close state : [08]

During opening : [12]

During closing : [22]

#### ⑧ Slider position [S - \* \* \* \*]

In Side Switch ON : [01]

In Side Switch OFF : [00]

#### ⑨ Output video system [V - \* \* \* \*]

NTSC system : [NTSC]

PAL system : [PAL]

Automatic setting : [AUTO]

#### Scart terminal output [SK - \* \*]

(Display only the WY model which can do the output setting of scart terminal.)

VIDEO : [00]

S-VIDEO : [01]

RGB : [02]

#### ⑩ Disc sensing [DSC - \* \* \*]

The type of discs loaded is displayed.

[DVD], [CD], [VCD], [ ]

#### ⑪ Jitter value [J - \* \* \* \*]

Note: Don't use it.

#### ⑫ Version of the FL controller [FL: \* \* \* \*]

#### ⑬ Region setting of the player [REG: \*]

Setting value : [1] to [6]

#### ⑭ Destination setting of the FL controller

[MDL: \* \* \* \* / \* \* \*]

Four characters in the front represent code 01.

Three characters in the back represent the destination code.

J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM: /RAM,

LB: /LB, WY: /WY

#### ⑮ Version of the flash ROM [VERSION: \* \* \* \* \*]



## 7.1.2 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and region / revision indication		CLEAR (*1)	A8-45
Average value measurement of DVD error rate		5 (*1)	A8-05
CD error rate measurement		5 (*1)	A8-05
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
ZOOM ON (X2 -> X4 -> x1)		ZOOM	AF-37
Service mode indication (error rate indication, etc.)		CHP/TIM (*1)	A8-13
Model information indication		CHAP (*1)	A8-40
Title search Input mode IN Title No. input Search execution		SIDE A (*1) Numbers (*1) PLAY (*1)	A8-4D A8-00 to A8-09 A8-17
Region confirmation mode		A.MON (*1) Numbers (*1)	A8-1E A8-01 to A8-08

\*1 : Test mode remote control unit

### • Service mode indication (ESC + CHP/TIM keys)

ID Address

The error rate is always displayed in exponential notation, e.g., \*.\*\* e - \*, for both DVDs and CDs.  
EDC/ID/AV 1 error history (ID Address, EDC/ID Error, last eight errors)

### • Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)

The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)  
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

### • Indication of model information (ESC + CHAP keys)

The items from 12 to 15 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to CHIP VERSION, and M is changed to RF VERSION. For details, see 7.1.4.

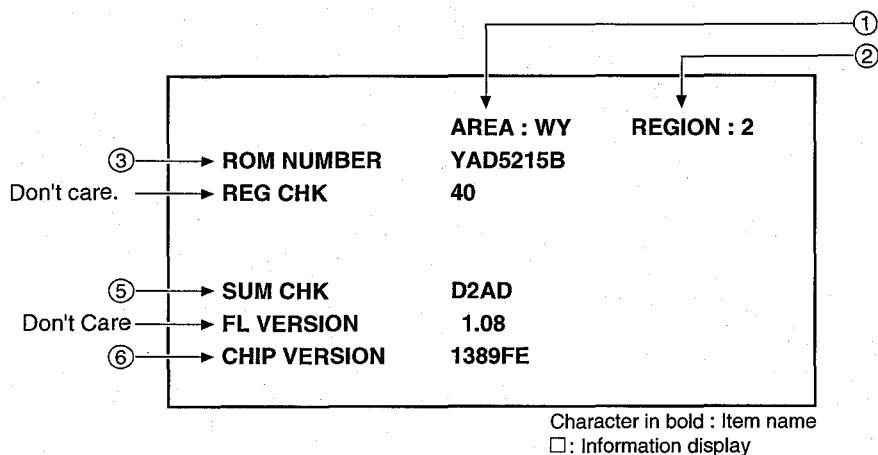
### • Region confirmation mode (ESC + A.MON [Test mode remote control unit] + "1"- "8" [Test mode remote control unit] keys)

After you press the A.MON key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

### 7.1.3 SPECIFICATION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.  
To close the model information display : Press the ESC key.

#### • Display contents



#### ① Destination indication

Display it according to model information set from the FL Driver IC.

#### ② Region No.

#### ③ ROM number

Rom display Version.

#### ⑤ SUM CHK SUM value of E2P ROM displays with four places.

#### ⑥ CHIP VERSION

## 7.1.4 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

### • Display during Service Mode

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.  
To quit, press the ESC key.

#### Service mode display

- ① ID Address
- ② Error rate (always displayed), in exponential notation

ERROR RATE : \* \* \* \* \*

( \* \* \* \* )

↑  
Number of error

### • Calculation of the average error rate

For DVDs: OK with  $5.0e-4$  or less, for CDs: OK with  $7.6e-3$  or less

ex) For DVDs

#### • Step 1

$\Delta\Delta e - \square$

$\Delta\Delta e -6$  : OK

$\Delta\Delta e -5$  : OK

$\Delta\Delta e -4$  : Refer to Step 2

$\Delta\Delta e -3$  : NG

$\Delta\Delta e -2$  : NG

#### • Step 2

$\Delta\Delta e -4$

$3.0e -4$  : OK

$4.0e -4$  : OK

$5.0e -4$  : OK

$6.0e -4$  : NG

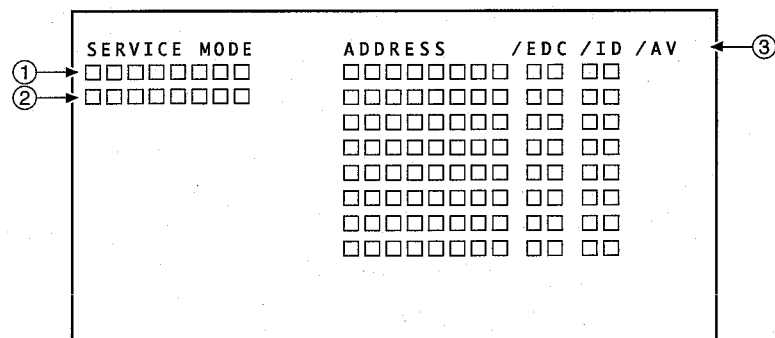
$7.0e -4$  : NG

### ③ EDC/ID error history (ID Address, EDC/ID errors, last eight errors)

Note:

\* Error of AV1 is not supported in this player.

Indication plan contents



Character in bold : Item name  
 $\square$  : Information display

## 7.1.5 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

### Case when this diagnosis is required :

When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), cannot be performed

### How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the PICKUP Assy is suspected.  
Measure the voltage between the two ends of one of the resistors mentioned below.

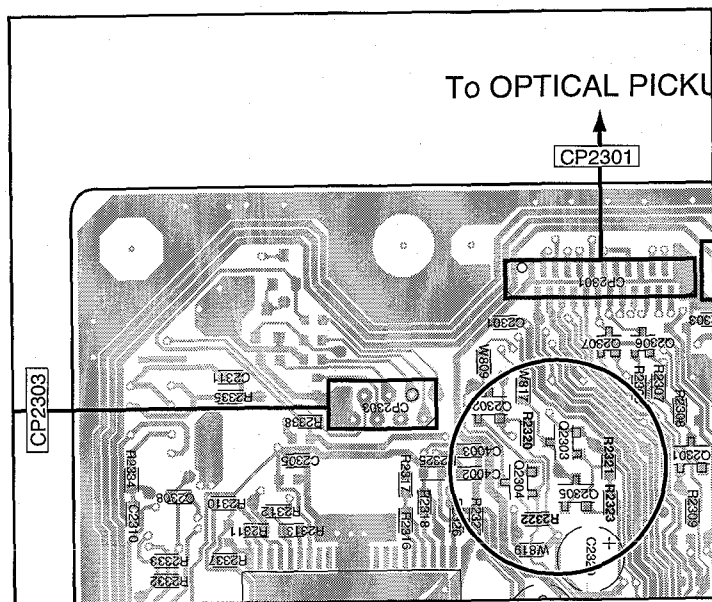
#### • No playback of a DVD :

Measure the voltage between the two ends of R2321 or R2323 on the DVDM Assy. If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

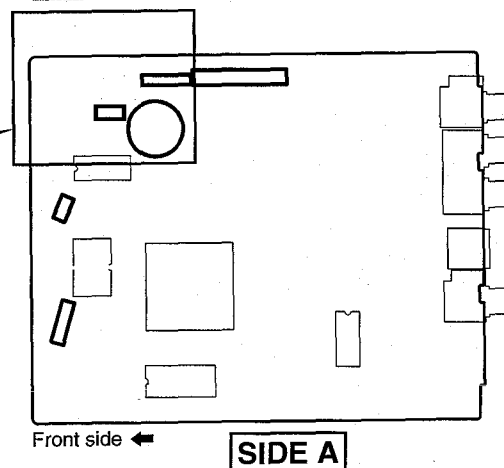
#### • No playback of a CD :

Measure the voltage between the two ends of R2320 or R2322 on the DVDM Assy. If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

If the measurements show degradation of an LD, replace the DVD MECHA Assy.



### A DVD MT PCB ASSY



## 7.1.6 TROUBLE SHOOTING

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	The power is not turned on.	Check the voltage of AT+3.3V, -28V and FLDC on the POWER SUPPLY Unit.	<b>POWER PCB ASSY</b>
		Are wires of output connector (POWER PCB ASSY) and CP4003 (DVDM Assy) disconnected or damaged ?	Connector / cable
		Check that the voltage at IC651-pin 10 (K 1) on the FLKY Assy becomes about 2.7V when the POWER key is pressed and 0 V when it is released.	<b>OPERATION 2 Assy</b> Tact SW (when operation of only the POWER key on the main unit is not accepted)
		Check that the voltage at OS651-pin 1 (IR) on the OPERATION1 Assy is in the range between 0 and 3.3 V while receiving signals from the remote control unit when any key on it is pressed.	<b>FLKY Assy</b> Remote receiver section (when operation of only the POWER key on the remote control unit is not accepted)
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	<ul style="list-style-type: none"> <li>Check the voltage of E+6.8V and SW+3.3V on the POWER SUPPLY Unit.</li> <li>Check the voltage of P.ON-H is about 2.8V on the POWER SUPPLY Unit.</li> </ul>	<b>POWER SUPPLY Unit</b>
		Check that the following voltage are output : IC4006-pin 5 : 1.8V, on the DVD MT PCB Assy.	<b>DVD MT PCB Assy</b> 1.8V Regulator IC (IC4006)
		Is a resonator (X4001 : 27MHz) on the DVDM Assy oscillating ?	<b>DVD MT PCB Assy</b> Crystal resonator (X4001)
		<ul style="list-style-type: none"> <li>Is a signal input into IC4004-pin26 (PCE#) on the DVDM Assy ? (Is a signal "H" for 80 mS and then "L" after the power is turned on ?) → Communication with flash ROM.</li> <li>Are the signals input into IC4005-pin 16 (DWE#), pin 19 (DCS#) and pin 38 (SDCLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with SDRAM</li> </ul>	<b>DVD MT PCB Assy</b> DVD IC (IC4002) Flash ROM (IC4004) SDRAM (IC4005)
		Is a signal output from IC4004-pin 28 (PRD#) on the DVD MT Assy? (Is a signal fluctuating for several hundred mS after the power is turned on ?)	<b>DVD MT PCB Assy</b> Flash ROM (IC4004)
		Are the signals of IC4001-pin 5(SDA) and pin 6(SCL) on the DVDM Assy fluctuating for one or two seconds after the power is turned ?	<b>DVD MT PCB Assy</b> EEPROM (IC4001)
3	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Check the video signal path between DVD IC (DVD MT Assy IC4002) and video-out terminal (see the block diagram)	<b>DVD MT PCB Assy</b> Video circuit after DVD IC (IC4002)

No.	Symptoms	Diagnosis Contents	Possible Defective Points
4	A tray cannot be opened. (An opening screen is displayed on the monitor)	Does the voltage of CP2302-pin 3 and pin 1 on the DVD MT Assy change normally ? Pin 5 (SW2(TRIN)): Tray is fully closed: "L" Pin 3 (SW1(TROUT)): Tray is fully opened: "L"	Tray SW
		Is a LOAD-DRV signal reaching ?	DVD MT PCB Assy DVD IC (IC4002)
		Are the signals output from IC2301-pin 36 and pin 37 (CP2302-pin 4 and pin 5) on the DVDM Assy ? Pin 4: Approx. 4.5V during opening tray approx. 0V during closing tray. Pin 5: Approx. 0V during opening tray approx. 4.5V during closing tray.	DVD MT PCB Assy FTS Driver IC (IC2301)
		Are wires of CP2302 and CP2303 on the DVDM Assy disconnected or damaged ?	Connector / cable
		Does the voltage of CD2301-pin 5 change by pressing the Inside switch.	Inside switch
		5	Playback impossible (no focusing)
Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup		
Are plastic parts damaged ? Or is a shaft detached ? Is the turntable detached or tilted ?	Mechanism section (motor)		
Is flexible cable of CP2301 on the DVD MT Assy disconnected or damaged ?	Flexible cable / connector		
Is signal output from IC4002-pin 42 (FOSO) on the DVDM Assy ? (Device control of about 1.4 V is output usually. It is fluctuated by about $\pm 250$ mV with focus up / down.)	DVD MT PCB Assy DVD IC (IC4002)		
6	Playback impossible (Spindle does not turn)		
		Is there any part detached from the spindle motor ? Or Is there any foreign object lodged in it ?	Mechanism section (Spindle motor)
		Are wires of CP2303 on the DVD MT Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC4002-pin 37 (DMSO) on the DVDM Assy ?	DVD MT PCB Assy DVD IC (IC4002)
7	Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at each both ends of R2303 and R2305 on the DVD MT Assy is 0.4 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at each both ends of R2302 and R2304 on the DVD MT Assy is 0.4 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of a CD is impossible)
		Are there scratches or dirt on the disc ?	Disc
8	Picture disturbance during playback (block noise, freeze, other)	Are there scratches or dirt on the disc ? Is there a problem with the format of the disc ?	Disc
9	No sound (Picture is normal)	Check the waveform (ABCK, ALRCK, ACLK, ASDATA).	DVD MT PCB Assy DVD IC (IC4002)
		Is signal output from IC8004-pin 7 and pin 8 on the DVD MT Assy ?	DVD MT PCB Assy Audio Dac IC (IC8004)

### ● Symptoms That May Occur When Any Of The Following ICs Is In Failure

IC	Symptoms
EEP ROM (DVD MT Assy : IC4001)	User's data cannot be stored in memory. The ID number is lost.
16M Flash ROM (DVD MT Assy : IC4004)	The power cannot be turned on. Downloading of the firmware cannot be performed.
DVD IC (DVD MT Assy : IC4002)	Any kind of symptoms (no power, a failure in any of the servo, video and audio systems, etc.) may be generated, because the DVD processing is performed by a single chip.
64M SDRAM (DVD MT Assy : IC4005)	No power. Block noise is generated during playback.

## 7.2 DISASSEMBLY

### ■ REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

#### 1-1: TOP CABINET/FRONT CABINET/OPERATION 1/2PCB (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP4002).
4. Unlock the 4 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 7 screws ③.
7. Remove the Operation 1/2 PCB in the direction of arrow (C).

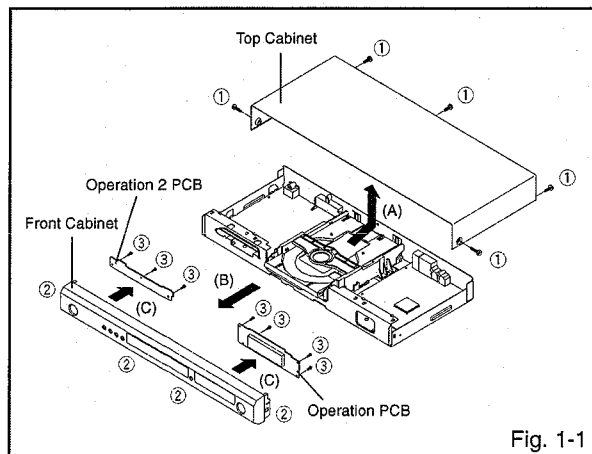


Fig. 1-1

#### 1-2: POWER PCB (Refer to Fig. 1-2)

1. Disconnect the following connectors: (CP4003, CP8001).
2. Remove the 4 screws ①.
3. Remove the 4 screws ②.
4. Remove the Power PCB in the direction of arrow.

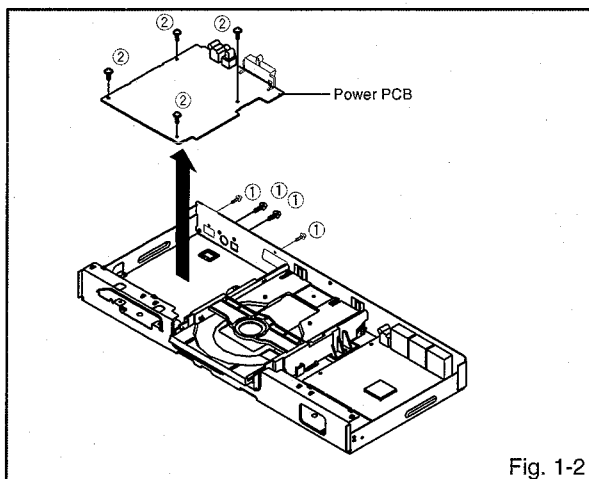


Fig. 1-2

#### 1-3: DVD DECK (Refer to Fig. 1-3)

1. Short circuit the position shown in Fig. 1-3 using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (CP2301, CP2302, CP2303).
3. Remove the 4 screws ①.
4. Remove the DVD Deck in the direction of arrow.

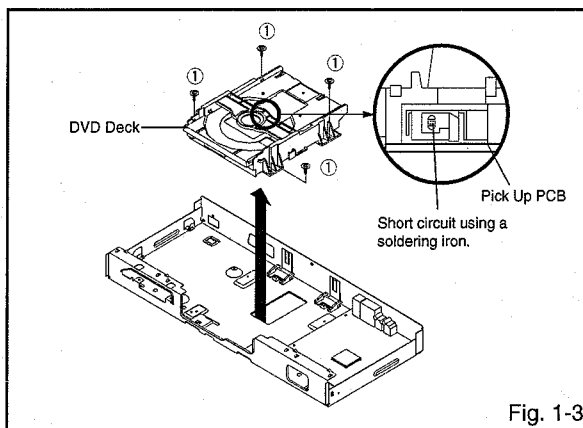


Fig. 1-3

#### NOTE

1. Before your operation, please read "PREPARATION OF SERVICING".
2. Use the Lead Free solder.
3. Manual soldering conditions
  - Soldering temperature:  $320 \pm 20^{\circ}\text{C}$
  - Soldering time: Within 3 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to prevent the Flux smoke from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

#### 1-4: DVD PCB (Refer to Fig. 1-4)

1. Remove the 4 screws ①.
2. Remove the 4 screws ②.
3. Remove the DVD PCB in the direction of arrow.

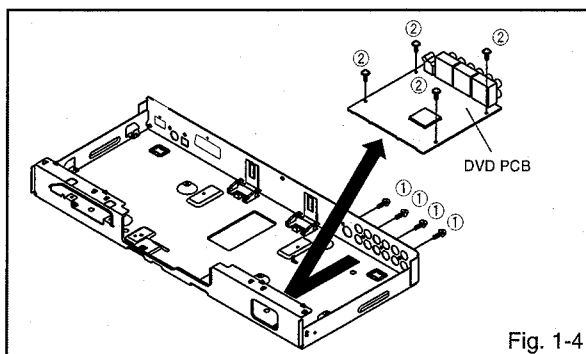


Fig. 1-4

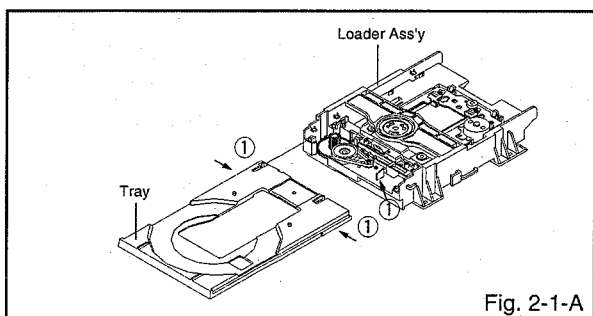
## REMOVAL OF DVD DECK PARTS

### NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

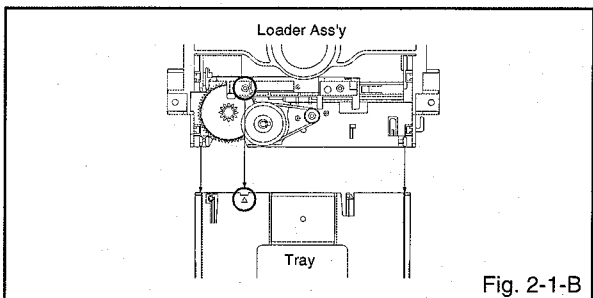
### 2-1: TRAY (Refer to Fig. 2-1-A)

1. Set the Tray opened. (Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)
2. Unlock the 3 supports ① and draw it while sagging the Tray.



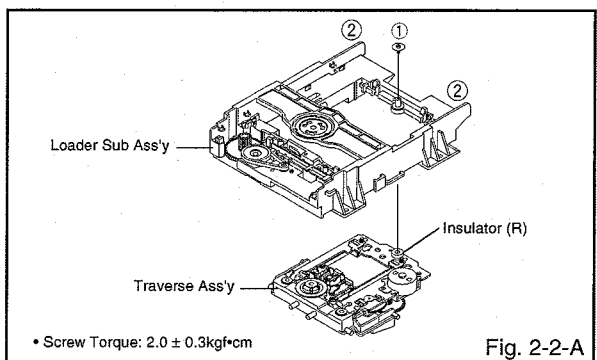
### NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 2-1-B so that the each markers are met.



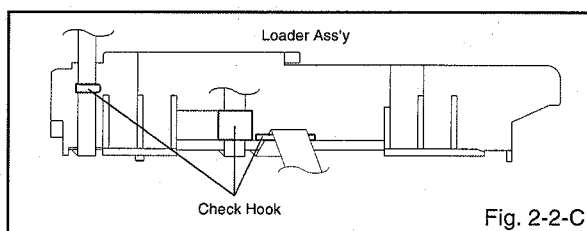
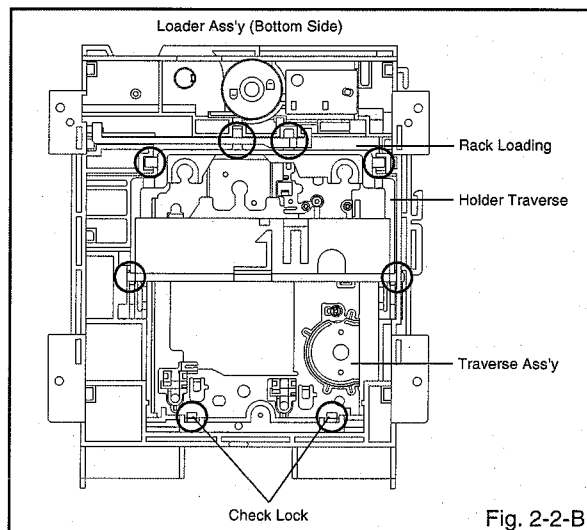
### 2-2: TRAVERSE ASS'Y (Refer to Fig. 2-2-A)

1. Remove the screw ①.
2. Unlock the 2 supports ②.
3. Remove the Insulator (R) from the Loader Sub Ass'y.
4. Remove the Traverse Ass'y.



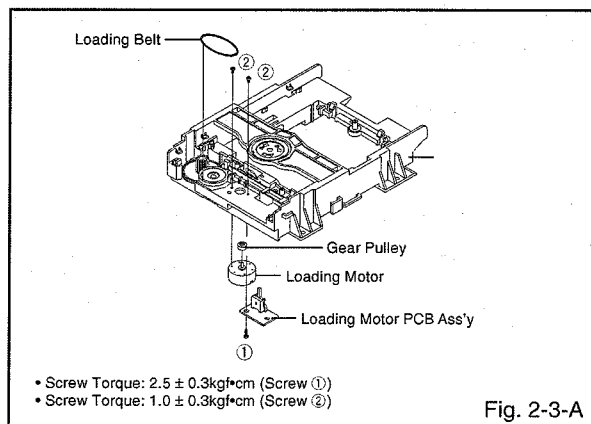
### NOTE

1. In case of the Traverse Ass'y, install it from (1) to (4) in order. (Refer to Fig. 2-2-B)
2. In case of the Traverse Ass'y installation, hook the wire on the Loader Ass'y as shown Fig. 2-2-C.



### 2-3: LOADING MOTOR PCB ASS'Y/ LOADING BELT (Refer to Fig. 2-3-A)

1. Remove the Loading Belt.
2. Remove the screw ①.
3. Remove the Loading Motor PCB Ass'y.
4. Remove the 2 screws ②.
5. Remove the Loading Motor.
6. Remove the Gear Pulley.





### NOTE

1. In case of the Pulley Motor installation, check if the value of the Fig. 2-3-B is correct.
2. When installing the wire of the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-C.  
Manual soldering conditions
  - Soldering temperature:  $350 \pm 5^\circ\text{C}$
  - Soldering time: Within 4 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
3. When installing the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-D.
4. In case of the Loading Motor PCB Ass'y installation, hook the wire on the Loader Sub Ass'y as shown Fig. 2-3-E.

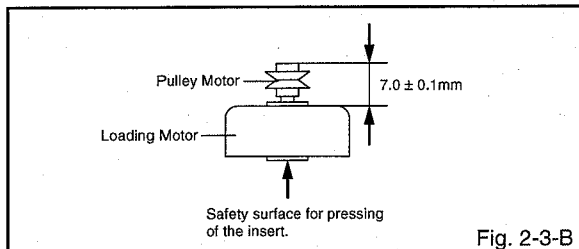


Fig. 2-3-B

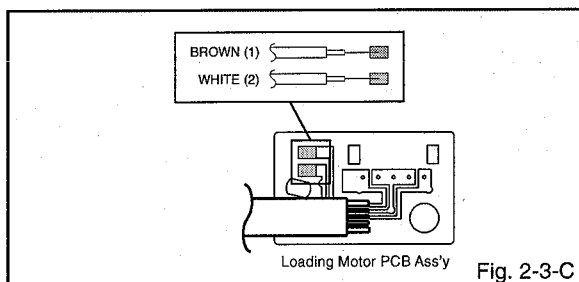


Fig. 2-3-C

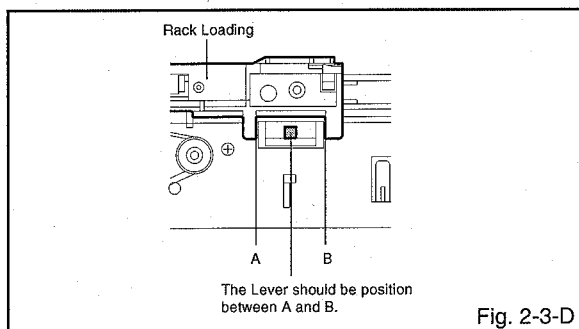


Fig. 2-3-D

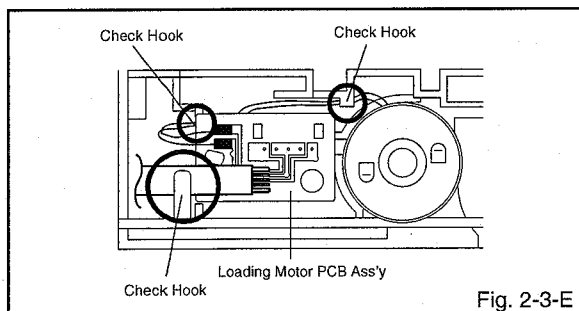


Fig. 2-3-E

### 2-4: RACK LOADING/MAIN GEAR/PULLEY GEAR (Refer to Fig. 2-4-A)

1. Unlock the support ① and remove the Gear Pulley.
2. Remove the Gear Main.
3. Press down the catcher ② and slide the Rack Loading.

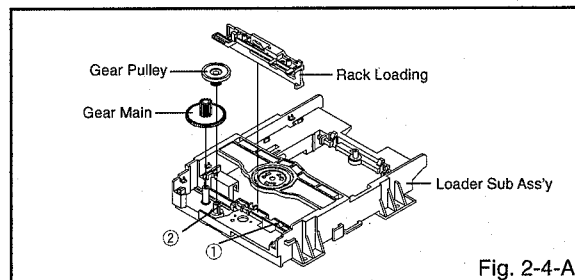


Fig. 2-4-A

### NOTE

1. In case of the Rack Loading installation, hook the Rack Loading on the Loader Sub Ass'y as shown Fig. 2-4-B.
2. When installing the Gear Main, take care the direction of up or down as shown Fig. 2-4-C.

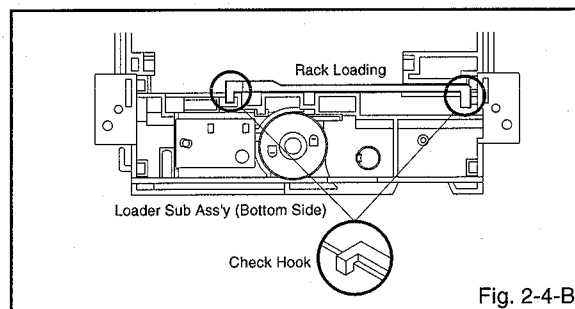


Fig. 2-4-B

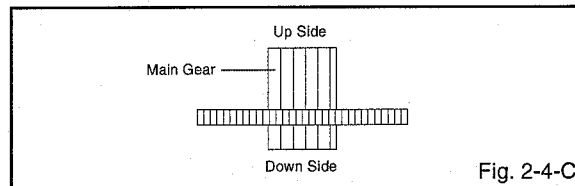


Fig. 2-4-C

### 2-5: CLAMPER ASS'Y (Refer to Fig. 2-5-A)

1. Press the Clamper and rotate the Plate Clamper clockwise, then unlock the 3 supports ①.
2. Remove the Plate Clamper, Magnet Clamper and Clamper.

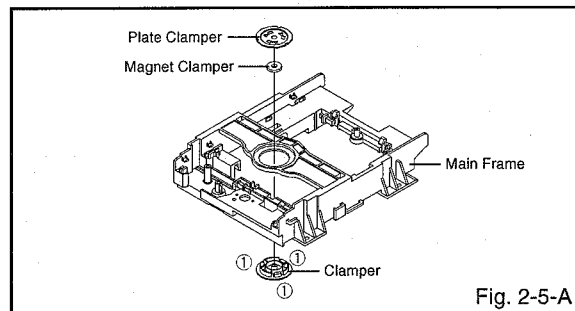


Fig. 2-5-A

**NOTE**

1. In case of the Clamper Ass'y installation, install correctly as Fig. 2-5-B.

A

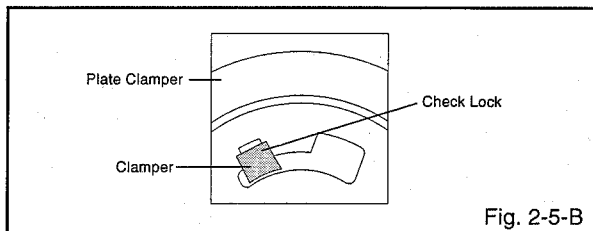


Fig. 2-5-B

**2-6: HOLDER TRAVERSE/INSULATOR (F)/INSULATOR (R) (Refer to Fig. 2-6-A)**

B

1. Remove the Holder Traverse.
2. Remove the 2 Insulator (F).
3. Remove the Insulator (R).

C

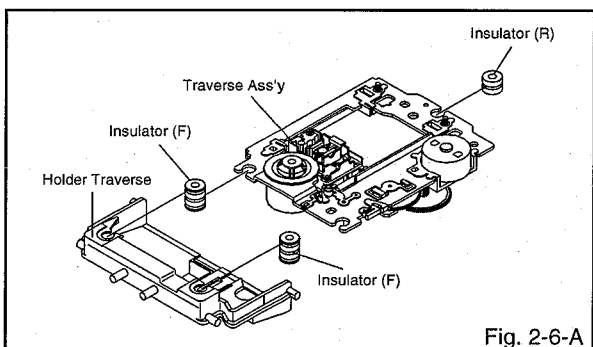


Fig. 2-6-A

**NOTE**

1. In case of the Insulator (F) installation, install correctly as Fig. 2-6-B.

D

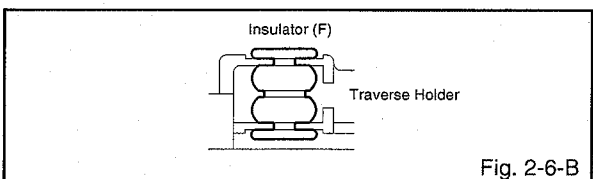


Fig. 2-6-B

**2-7: SWITCH PCB ASS'Y/GEAR MIDDLE/GEAR FEED/RACK FEED ASS'Y/FEED MOTOR (Refer to Fig. 2-7-A)**

E

1. Unlock the support ①.
2. Remove the Gear Middle.
3. Remove the screw ②.
4. Remove the Rack Feed Ass'y.
5. Remove the screw ③.
6. Remove the Switch PCB Ass'y.
7. Remove the screw ④.
8. Remove the Gear Feed.
9. Remove the 2 screws ⑤.
10. Remove the Feed Motor.
11. Remove the Gear Motor.

F

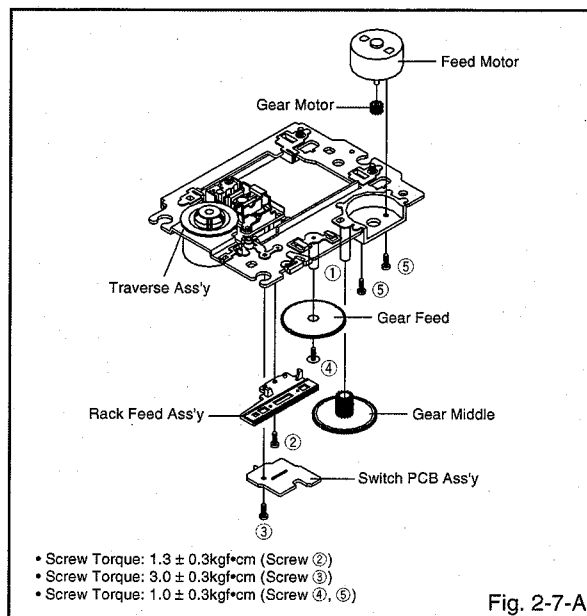


Fig. 2-7-A

**NOTE**

1. When installing the Rack Feed Ass'y, push both ends to align the teeth as shown Fig. 2-7-B. Then install it.
2. In case of the Gear Motor installation, check if the value of the Fig. 2-7-C is correct.
3. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 2-7-D.  
 Manual soldering conditions
  - Soldering temperature:  $350 \pm 5^\circ \text{C}$
  - Soldering time: Within 4 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
4. After the assembly of the Traverse Ass'y, hook the wire on the Traverse Ass'y as shown Fig. 2-7-E.

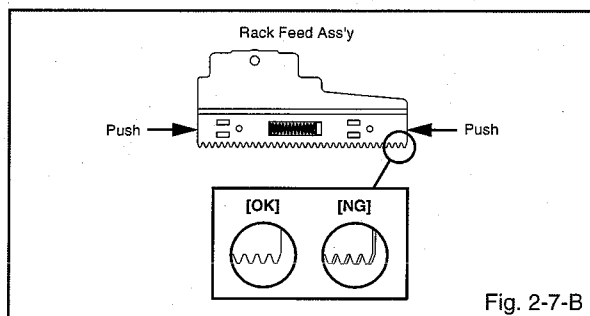


Fig. 2-7-B

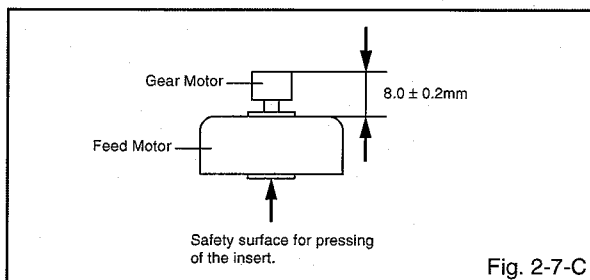
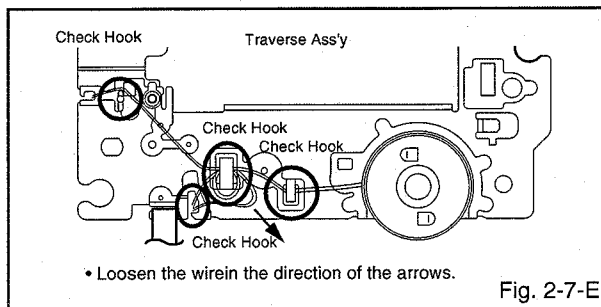
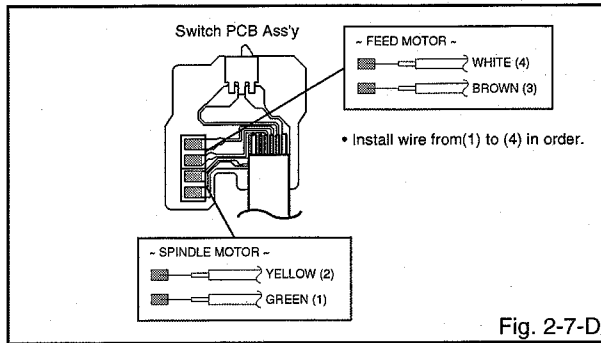


Fig. 2-7-C

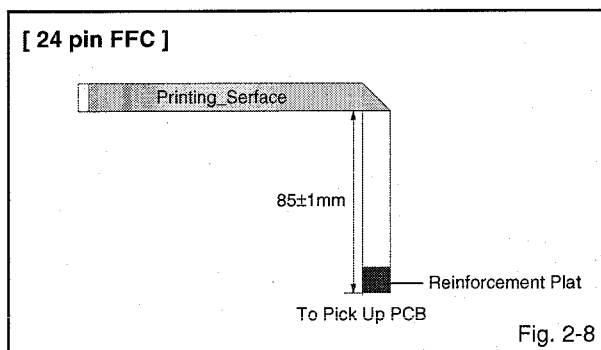


## 2-8: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 2-8.

### NOTE

1. Do not make the folding lines except the specified positions for the FFC.



## 7.3 IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

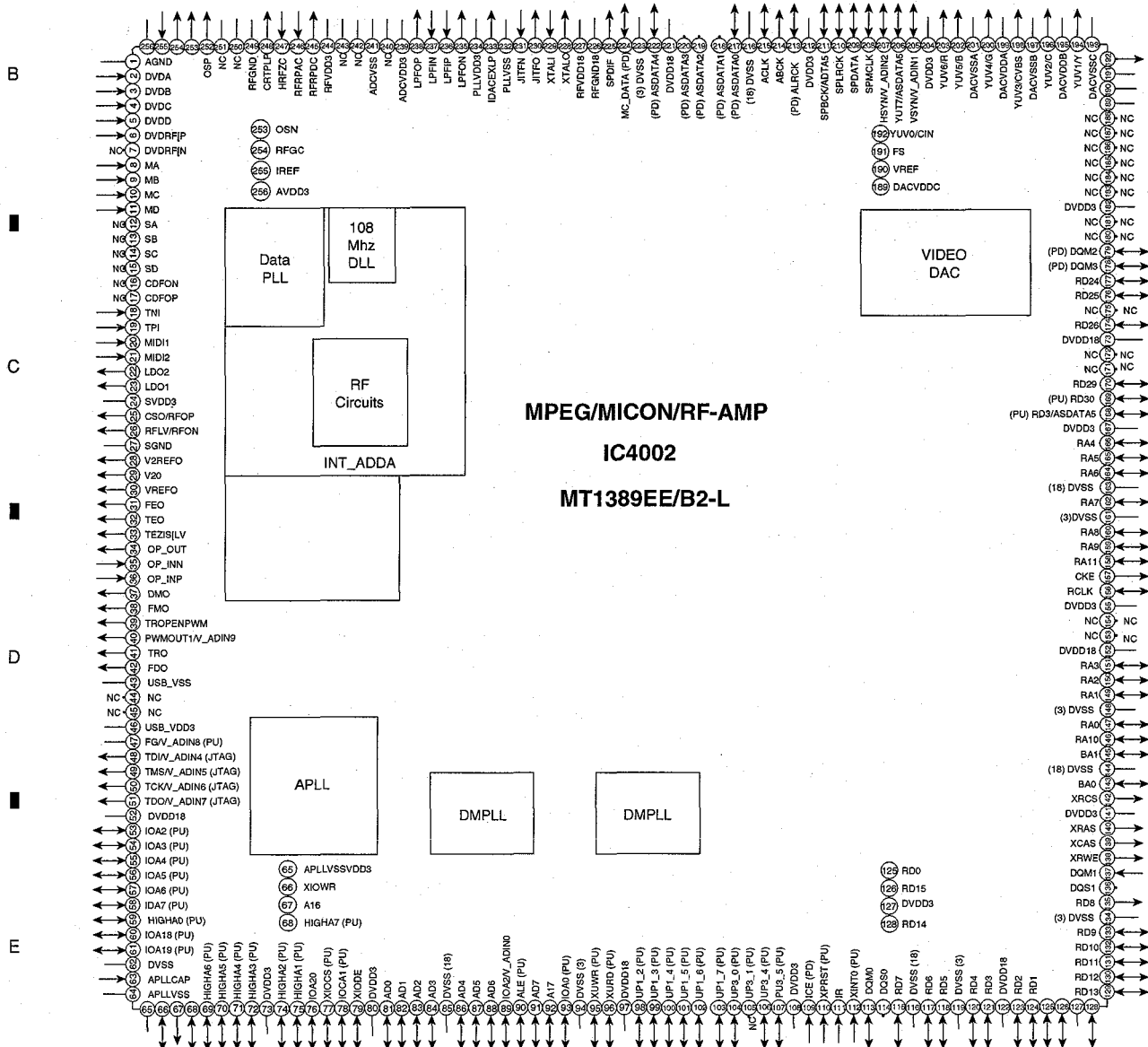
### • List of IC

MT1389EE/B2-L, LA6565, PT6315

### ■ MT1389EE/B2-L (DVD MT ASSY: IC4002)

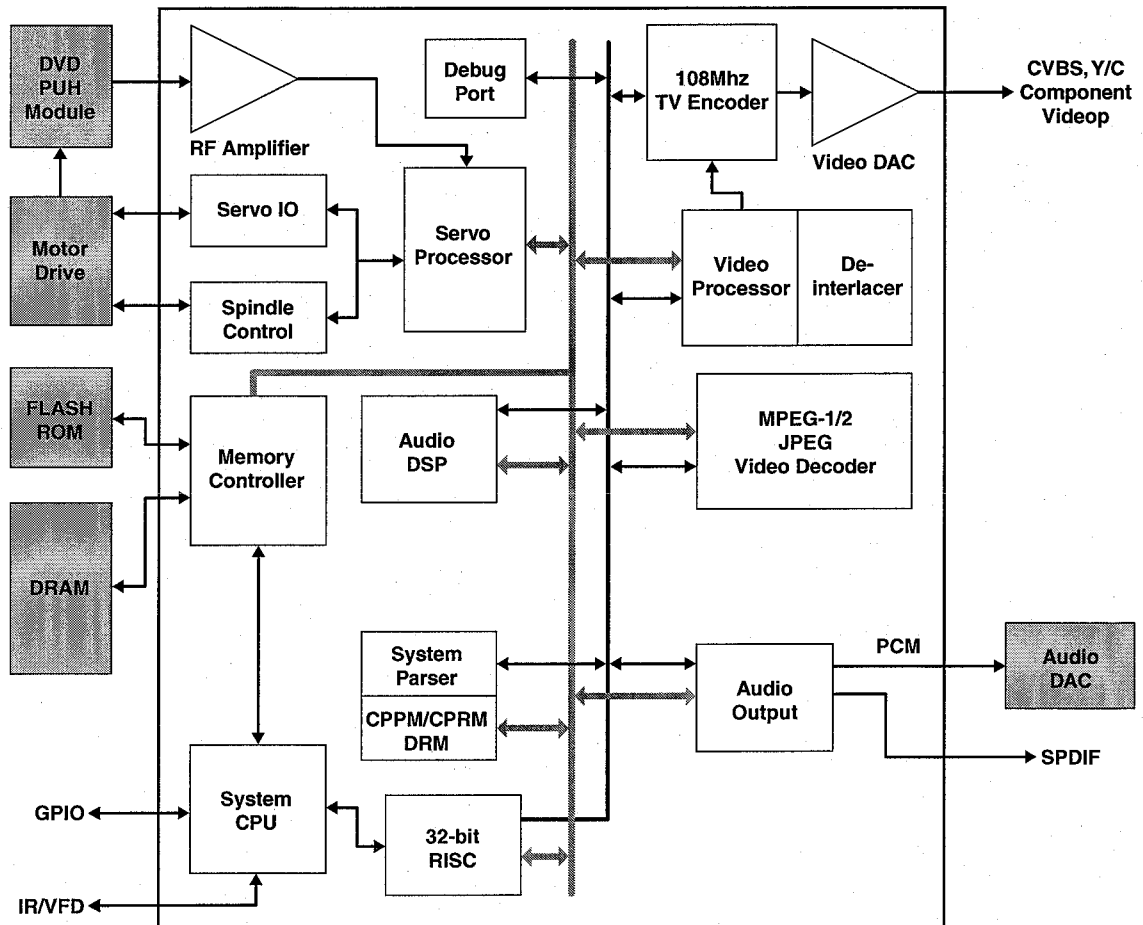
• MPEG / MICON / RF-AMP

### • Pin Arrangement (Top view)



• MPEG / MICON / RF-AMP Microcomputer

• Block Diagram



# **MT1389EE/B2-L (DVD MT ASSY : IC4002)**

• MPEG/MICON/RF-AMP CPU

## **● Pin Function**

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	AGND	—	Analog ground	48	TDI	I	Serial interface port 3 data-out Version AD input port 4 GPIO
2	DVDA	I	AC coupled input path A	49	TMS	I	Serial interface port 3 data-in Version AD input port 5 GPIO
3	DVDB	I	AC coupled input path B	50	TCK	I	Serial interface port 3 clock pin Version AD input port 6 GPIO
4	DVDC	I	AC coupled input path C	51	TDO	I	Serial interface port 3 chip-select Version AD input port 7 GPO
5	DVDD	I	AC coupled input path D	52	DVDD18	—	1.8V power pin for internal digital circuitry
6	DVDRFIP	I	AC coupled DVD RF signal input RFIP	53	IOA2	I/O	Microcontroller address 2/IO
7	DVDRFIN	I	AC coupled DVD RF signal input RFIN	54	IOA3	I/O	Microcontroller address 3/IO
8	MA	I	DC coupled main-beam RF signal input A	55	IOA4	I/O	Microcontroller address 4/IO
9	MB	I	DC coupled main-beam RF signal input B	56	IOA5	I/O	Microcontroller address 5/IO
10	MC	I	DC coupled main-beam RF signal input C	57	IOA6	I/O	Microcontroller address 6/IO
11	MD	I	DC coupled main-beam RF signal input D	58	IOA7	I/O	Microcontroller address 7/IO
12	SA	I	DC coupled sub-beam RF signal input A	59	HIGHA0	I/O	Microcontroller address 8
13	SB	I	DC coupled sub-beam RF signal input B	60	IOA18	I/O	Flash address 18/IO
14	SC	I	DC coupled sub-beam RF signal input C	61	IOA19	I/O	Flash address 19/IO
15	SD	I	DC coupled sub-beam RF signal input D	62	DVSS	—	3.3V Ground pin for internal digital circuitry
16	CDFON	I	CD focusing error negative input	63	APLLCAP	I	APLL External Capacitance connection
17	CDFOP	I	CD focusing error positive input	64	APLLVSS	—	Ground pin for audio clock circuitry
18	TNI	I	3 beam satellite PD signal negative input	65	APLLVDD3	—	3.3V Power pin for audio clock circuitry
19	TPI	I	3 beam satellite PD signal positive input	66	IOWR#	I/O	Flash write enable, active low/IO
20	MDI1	I	Laser power monitor input	67	A16	O	Flash address 16
21	MDI2	I	Laser power monitor input	68	HIGHA7	I/O	Microcontroller address 15
22	LDO2	O	Laser driver output	69	HIGHA6	I/O	Microcontroller address 14
23	LDO1	O	Laser driver output	70	HIGHA5	I/O	Microcontroller address 13
24	SVDD3	—	Analog power 3.3V	71	HIGHA4	I/O	Microcontroller address 12
25	CSO	O	Central servo/Positive main beam summing output	72	HIGHA3	I/O	Microcontroller address 11
26	RFLVL	O	RFRP low pass, or Negative main beam summing output	73	DVDD3	—	3.3V power pin for internal digital circuitry
27	SGND	—	Analog ground	74	HIGHA2	I/O	Microcontroller address 10
28	V2REFO	—	Reference voltage 2.8V	75	HIGHA1	I/O	Microcontroller address 9
29	V20	I/O	Reference voltage 2.0V	76	IOA20	I/O	Flash address 20/IO
30	VREFO	I/O	Reference voltage 1.4V	77	IOCS#	I/O	Flash chip select, active low/IO
31	FEO	O	Focus error monitor output	78	IOA1	I/O	Microcontroller address 1/IO
32	TEO	O	Tracking error monitor output	79	IOOE#	I/O	Flash output enable, active low/IO
33	TEZISLV	I/O	TE Slicing Level	80	DVDD3	—	3.3V power pin for internal digital circuitry
34	OP_OUT	O	Op amp output	81	AD0	I	Microcontroller address/data 0
35	OP_INN	I	Op amp negative input	82	AD1	I	Microcontroller address/data 1
36	OP_INP	I	Op amp positive input	83	AD2	I	Microcontroller address/data 2
37	DMO	O	Disk motor control output. PWM output	84	AD3	I	Microcontroller address/data 3
38	FMO	O	Feed motor control. PWM output	85	DVSS	—	1.8V Ground pin for internal digital circuitry
39	TROPENPWM	O	Tray PWM output/Tray open output	86	AD4	I	Microcontroller address/data 4
40	PWMOUT1	O	1 <sup>st</sup> General PWM output, or Version AD input9	87	AD5	I	Microcontroller address/data 5
41	TRO	O	Tracking servo output. PDM output of tracking servo compensator.	88	AD6	I	Microcontroller address/data 6
42	FOO	O	Focus servo output. PDM output of focus servo compensator	89	IOA21	I/O	Flash address 21/IO While External FLASH size <= 2MB: Version AD input port 0, or GPIO
43	DVSS	—	1.8V Ground pin for internal digital	90	ALE	I/O	Microcontroller address latch enable
44	NC	—	—				
45	NC	—	—				
46	DVDD3	—	3.3V power pin for internal digital circuitry				
47	FG(Digital pin)	—	Motor Hall sensor input, or Version AD input 8				

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
91	AD7	I	Microcontroller address/data 7	137	DQM1	I/O	Data mask 1
92	A17	O	Flash address 17	138	RWE#	O	DRAM Write enable, active low
93	IOA0	I/O	Microcontroller address 0/IO	139	CAS#	O	DRAM column address strobe, active low
94	DVSS	—	3.3V Ground pin for internal digital circuitry	140	RAS#	O	DRAM row address strobe, active low
95	UWR#	I	Microcontroller write strobe, active low	141	DVDD3	—	3.3V power pin for internal digital circuitry
96	URD#	I	Microcontroller read strobe, active low	142	RCS#	O	DRAM chip select, active low
97	DVDD18	—	1.8V power pin for internal digital circuitry	143	BA0	I/O	DRAM bank address 0
98	UP1_2	I/O	Microcontroller port 1-2	144	DVSS	—	1.8V Ground pin for internal digital circuitry
99	UP1_3	I/O	Microcontroller port 1-3	145	BA1	I/O	DRAM bank address 1
100	UP1_4	I/O	Microcontroller port 1-4	146	RA10	I/O	DRAM address 10
101	UP1_5	I/O	Microcontroller port 1-5	147	RA0	I/O	DRAM address 0
102	UP1_6	I/O	Microcontroller port 1-6 I <sup>2</sup> C clock pin	148	DVSS	—	3.3V Ground pin for internal digital circuitry
103	UP1_7	I/O	Microcontroller port 1-7 I <sup>2</sup> C data pin	149	RA1	I/O	DRAM address 1
104	UP3_0	I/O	Microcontroller port 3-0 8032 RS232 RXD	150	RA2	I/O	DRAM address 2
105	UP3_1	I/O	Microcontroller port 3-1 8032 RS232 TXD	151	RA3	I/O	DRAM address 3
106	UP3_4	I/O	Microcontroller port 3-4 Hardwired RD232 RXD I <sup>2</sup> C clock pin	152	DVDD18	—	1.8V power pin for internal digital circuitry
107	UP3_5	I/O	Microcontroller port 3-5 Hardwired RD232 TXD I <sup>2</sup> C data pin	153	NC	—	—
108	DVDD3	—	3.3V power pin for internal digital circuitry	154	NC	—	—
109	ICE	I	Microcontroller ICE mode enable	155	DVDD3	—	3.3V power pin for internal digital circuitry
110	PRST#	I	Power on reset input, active low	156	RCLK	I/O	Dram clock
111	IR	I	IR control signal input	157	CKE	O	DRAM clock enable
112	INT0#	I/O	Microcontroller external interrupt 0, active low	158	RA11	I/O	DRAM address bit 11
113	DQM0	I/O	Data mask 0	159	RA9	I/O	DRAM address 9
114	DQS0	I/O	GPIO	160	RA8	I/O	DRAM address 8
115	RD7	I/O	DRAM data 7	161	DVSS	—	3.3V Ground pin for internal digital circuitry
116	DVSS	—	1.8V Ground pin for internal digital circuitry	162	RA7	I/O	DRAM address 7
117	RD6	I/O	DRAM data 6	163	DVSS	—	1.8V Ground pin for internal digital circuitry
118	RD5	I/O	DRAM data 5	164	RA6	I/O	DRAM address 6
119	DVSS	—	3.3V Ground pin for internal digital circuitry	165	RA5	I/O	DRAM address 5
120	RD4	I/O	DRAM data 4	166	RA4	I/O	DRAM address 4
121	RD3	I/O	DRAM data 3	167	DVDD3	—	3.3V power pin for internal digital circuitry
122	DVDD18	—	1.8V power pin for internal digital circuitry	168	RD31	I/O	GPIO
123	RD2	I/O	DRAM data 2	169	RD30	I/O	GPIO
124	RD1	I/O	DRAM data 1	170	RD29	I/O	GPIO
125	RD0	I/O	DRAM data 0	171	NC	—	—
126	RD15	I/O	DRAM data 15	172	NC	—	—
127	DVDD3	—	3.3V power pin for internal digital circuitry	173	DVDD18	—	1.8V power pin for internal digital circuitry
128	RD14	I/O	DRAM data 14	174	RD26	I/O	GPIO
129	RD13	I/O	DRAM data 13	175	NC	—	—
130	RD12	I/O	DRAM data 12	176	RD25	I/O	GPIO
131	RD11	I/O	DRAM data 11	177	RD24	I/O	GPIO
132	RD10	I/O	DRAM data 10	178	DQM3	I/O	GPIO
133	RD9	I/O	DRAM data 9	179	DQM2	I/O	GPIO
134	DVSS	—	3.3V Ground pin for internal digital circuitry	180	NC	—	—
135	RD8	I/O	DRAM data 8	181	NC	—	—
136	DQS1	I/O	GPIO	182	DVDD3	—	3.3V power pin for internal digital circuitry
				183	NC	—	—
				184	NC	—	—
				185	NC	—	—
				186	NC	—	—
				187	NC	—	—
				188	NC	—	—

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
189	DACVDDC	—	3.3V power pin for VIDEO DAC circuitry	213	ALRCK	I/O	Audio left/right channel clock Trap value in power-on reset: 1:use external 373 0:use internal 373
190	VREF	—	Bandgap reference voltage	214	ABCK	O	Audio bit clock Phase de-modulation
191	FS	—	Full scale adjustment	215	ACLK	I/O	Audio DAC master clock
192	YUV0	O	Video data output bit 0 Compensation capacitor	216	DVSS	—	1.8V Ground pin for internal digital circuitry
193	DACVSSC	—	Ground pin for VIDEO DAC circuitry	217	ASDATA0	I/O	Audio serial data 0 (Front-Left/Front-Right) DSD data left channel Trap value in power-on reset: 1:manufactory test mode 0:normal operation
194	YUV1	O	Video data output bit 1 Analog Y output	218	ASDATA1	I/O	Audio serial data 1 (Left-Surround/Right-Surround) DSD data right channel Trap value in power-on reset: 1:manufactory test mode 0:normal operation While only 2 channels output: GPIO
195	DACVSSB	—	Ground pin for VIDEO DAC circuitry	219	ASDATA2	I/O	Audio serial data 2 (Center/LFE) DSD data left surround channel Trap value in power-on reset: 1:manufactory test mode 0:normal operation While only 2 channels output: GPIO
196	YUV2	O	Video data output bit 2 Analog chroma output	220	ASDATA3	I/O	Audio serial data 3 (Center-back/Center-left-back/Center-right-back, in 6.1 or 7.1 mode) DSD data right surround channel Trap value in power-on reset: 1:manufactory test mode 0:normal operation While only 2 channels output: GPIO
197	DACVSSA	—	Ground pin for VIDEO DAC circuitry	221	DVDD18	—	1.8V power pin for internal digital circuitry
198	YUV3	O	Video data output bit 3 Analog composite output	222	ASDATA4	I/O	Audio serial data 4 (Down-mixed Left/Right) DSD data center channel Trap value in power-on reset: 1:manufactory test mode 0:normal operation While only 2 channels output: Microcontroller external interrupt 1 GPIO
199	DACVSSA	—	Ground pin for VIDEO DAC circuitry	223	DVSS	—	3.3V Ground pin for internal digital circuitry
200	YUV4	O	Video data output bit 4 Green or Y	224	MC_DATA	I/O	Microphone serial input While not support Microphone: Microcontroller external interrupt 2 GPIO
201	DACVSSA	—	Ground pin for VIDEO DAC circuitry	225	SPDIF	O	SPDIF output
202	YUV5	O	Video data output bit 5 Blue or CB	226	RFGND18	—	Analog ground
203	YUV6	O	Video data output bit 6 Red or CR	227	RFVDD18	—	Analog power 1.8V
204	DVDD3	—	3.3V power pin Video DAC digital circuitry only	228	XTALO	O	27M crystal out
205	VSYN	I/O	Vertical sync input/output While no External TV-encoder: Vertical sync for video-input Version AD input port 1 GPIO	229	XTALI	I	27M crystal in
206	YUV7	I/O	Video data output bit 7 While no External TV-encoder: Microcontroller external interrupt 3 Audio serial data 5 part II:DSD data sub-woofer channel or Microphone output GPIO	230	JITFO	O	The output terminal of RF jitter meter
207	HSYN	I/O	Horizontal sync input/output While no External TV-encoder: Horizontal sync for video-input Microcontroller external interrupt 4 Version AD input port 2 GPIO	231	JITFN	I	The input terminal of RF jitter meter
208	SPMCLK	I/O	Audio DAC master clock of SPDIF input While SPDIF input is not used: Serial interface port 0 clock pin GPIO	232	PLLSS	—	Ground pin for data PLL and related analog circuitry
209	SPDATA	I/O	Audio data of SPDIF input While SPDIF input is not used: Serial interface port 0 data-in GPIO	233	IDACEXLP	O	Data PLL DAC Low-pass filter
210	SPLRCK	I/O	Audio left/right channel clock of SPDIF input While SPDIF input is not used: Serial interface port 0 data-out GPIO	234	PLLVD3	—	Power pin for data PLL and related analog circuitry
211	SPBCK	I/O	Audio bit clock of SPDIF input While SPDIF input is not used: Serial interface port 0 chip select Audio serial data 5 part I:DSD data sub-woofer channel or Microphone output GPIO	235	LPFON	O	The negative output of loop filter amplifier
212	DVDD3	—	3.3V power pin for internal digital circuitry	236	LPFIP	I	The positive input terminal of loop filter amplifier
				237	LPFIN	I	The negative input terminal of loop filter amplifier
				238	LPFOP	O	The positive output of loop filter amplifier

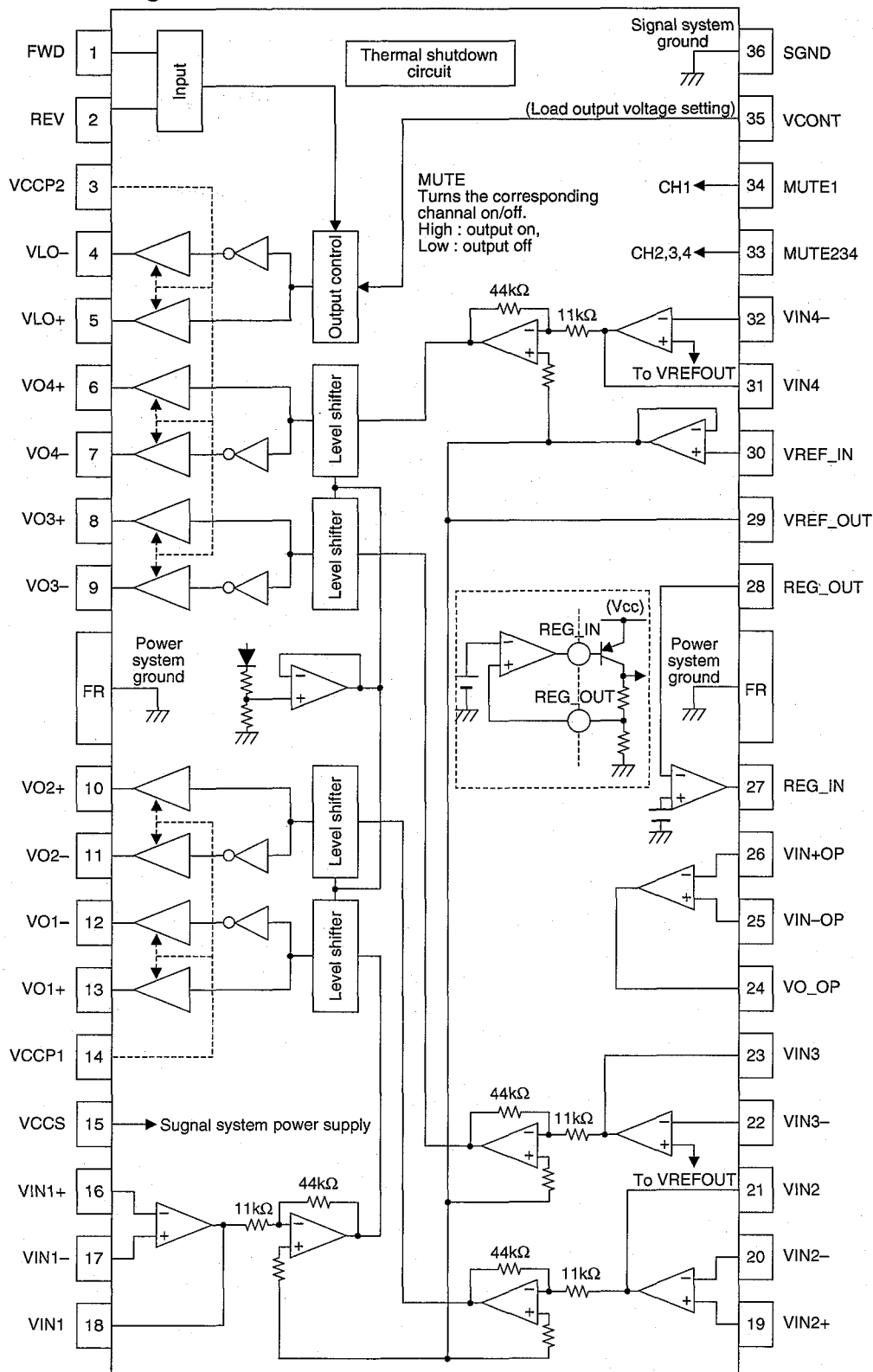


No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
239	ADCVDD3	–	Analog 3.3V Power for ADC	249	RFGND	–	Analog Power
240	NC	–	–	250	NC	–	–
241	ADCVSS	–	Analog ground for ADC	251	NC	–	–
242	NC	–	–	252	OSP	O	RF Offset cancellation capacitor connecting
243	NC	–	–	253	OSN	O	RF Offset cancellation capacitor connecting
244	RFVDD3	–	Analog Power	254	RFGC	O	RF AGC loop capacitor connecting for DVD-ROM
245	RFRPDC	O	RF ripple detect output	255	IREF	I	Current reference input. It generates reference current for RF path. Connect an external 15K resistor to this pin and AVSS
246	RFRPAC	I	RF ripple detect input (through AC-coupling)				
247	HRFZC	I	High frequency RF ripple zero crossing				
248	CRTPLP	O	Defect level filter capacitor connecting	256	AVDD3	–	Analog power 3.3V

# LA6565(I03F065650) : (DVD MT : IC2301)

• MOTOR DRIVE

## ● Internal Block Diagram



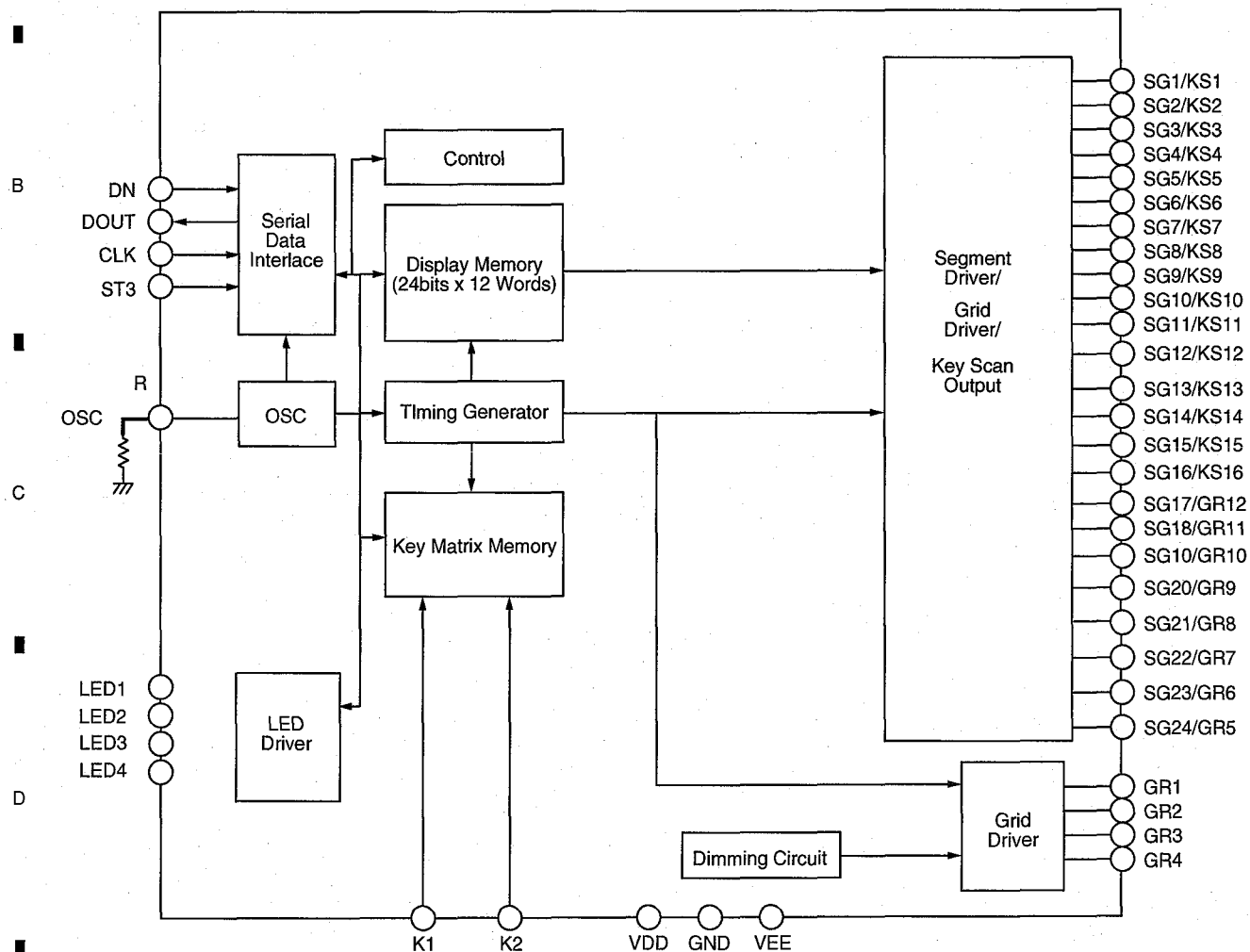
## ● Pin Functions

Pin No.	Pin Name	Pin Descriptions
1	FWD	Loading output direction switching (FWD). Loading system logic input.
2	REV	Loading output direction switching (REV). Loading system logic input.
3	V CC 2	Channels 3, 4, and loading power stage power supply
4	VLO –	Loading output (–)
5	VLO +	Loading output (+)
6	VO4 +	Channel 4 output (+)
7	VO4 –	Channel 4 output (–)
8	VO3 +	Channel 3 output (+)
9	VO3 –	Channel 3 output (–)
10	VO2 +	Channel 2 output (+)
11	VO1 –	Channel 2 output (–)
12	VO1 –	Channel 1 output (–)
13	VO1 +	Channel 1 output (+)
14	VCCP1	Channel 1 and 2 power stage power supply
15	VCCS	Signal system power supply
16	VIN1 +	Channel 1 input. Input operational amplifier + input.
17	VIN1 –	Channel 1 input. Input operational amplifier – input.
18	VIN1	Channel 1 input. Input operational amplifier output.
19	VIN2 +	Channel 2 input. Input operational amplifier + input.
20	VIN2 –	Channel 2 input. Input operational amplifier – input.
21	VIN2	Channel 2 input. Input operational amplifier output.
22	VIN3 –	Channel 3 input. Input operational amplifier – input.
23	VIN3	Channel 3 input. Input operational amplifier output.
24	VO_OP	Operational amplifier output
25	VIN–OP	Operational amplifier – input
26	VIN+OP	Operational amplifier + input
27	REG_IN	Regulator error amplifier output. Connect this pin to the base of the external pnp transistor.
28	REG_OUT	Regulator error amplifier input (+).
29	VREF_OUT	VREF amplifier (voltage follower) output.
30	VREF_IN	VREF input. Apply the external reference voltage to this pin.
31	VIN4	Channel 4 input. Input operational amplifier output.
32	VIN4 –	Channel 4 input operational amplifier – input.
33	MUTE234	Controls the on/off state of channels 2, 3, and 4.
34	MUTE1	Channel 1 output on/off control
35	VCONT	Loading block output high-level voltage setting
36	S_GND	Signal system ground

# PT6315 (OPERATION ASSY : IC651)

• FIP DRIIVE IC

## ● Block Diagram



## ● Pin Description

Pin Name	I/O	Description	Pin No.
LED1 to LED4	O	LED Output Pin	1 to 4
OSC	I	Oscillator Input Pin A resistor is connected to this pin to determine the oscillation frequency	5
DOUT	O	Data Output Pin (N-Channel, Open-Drain) This pin outputs serial data at the falling edge of the shift clock (starting from the lower bit).	6
DIN (Schmitt Trigger)	I	Data Input Pin This pin inputs serial data at the rising edge of the shift clock (starting from the lower bit)	7
CLK (Schmitt Trigger)	I	Clock Input Pin This pin reads serial data at the rising edge and outputs data at the falling edge.	8
STB (Schmitt Trigger)	I	Serial Interface Strobe Pin The data input after the STB has fallen is processed as a command. When this pin is "HIGH", CLK is ignored.	9
K1 to K2	I	Key Data Input Pins The data inputted to these pins are latched at the end of the display cycle.	10, 11
VSS	—	Logic Ground Pin	12, 44
VDD	—	Logic Power Supply	13, 43
SG1/KS1 to SG16/KS16	O	High-Voltage Segment Output Pins Also acts as the Key Source	14 to 29
VEE	—	Pull-Down Level	30
SG17/GR12 to SG24/GR5	O	High Voltage Segment/Grid Output Pins	31 to 38
GR4 to GR1	O	High-Voltage Grid Output Pins	39 to 42

## 7.4 DISC / CONTENT FORMAT PLAYBACK COMPATIBILITY

### Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format—see below for further compatibility information.

Please also note that recordable discs cannot be recorded using this player.



- **DVD** is a trademark of DVD Format/Logo Licensing Corporation.
- **F** is a trademark of Fuji Photo Film Co. Ltd.
- Also compatible with KODAK Picture CD
- About DualDisc playback

A DualDisc is a new two-sided disc, one side of which contains DVD content video, audio, etc. while the other side contains non-DVD content such as digital audio material.

The non-DVD, audio side of the disc is not compliant with the CD Audio specification and therefore may not play.

The DVD side of a DualDisc plays in this product.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

This player supports the IEC's Super VCD standard. Compared to the Video CD standard, Super VCD offers superior picture quality, and allows two stereo soundtracks to be recorded. Super VCD also supports the widescreen size.



### CD-R/RW compatibility

- Compatible formats: CD-Audio, Video CD/Super VCD, ISO 9660 CD-ROM\* containing MP3, WMA, JPEG or DivX video files
  - \* ISO 9660 Level 1 or 2 compliant. CD physical format : Mode1, Mode2 XA Form1.
- Romeo and Joliet file systems are both compatible with this player.
- Multi-session playback: No
- Unfinalized disc playback: No
- Filestructure (may differ): Up to 299 folders on a disc; up to 648 folders and files (combined) within each folder

### DVD-R/RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)\*
  - \* Editpoints may not play exactly as edited; screen may go momentarily blank at edited points.
- Unfinalized playback: No
- WMA/MP3/JPEG file playback on DVD-R/RW: No

### Compressed audio compatibility

- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA)
- Sampling rates: 32, 44.1 or 48kHz
- Bit-rates: Any (128Kbps or higher recommended)
- VBR (variable bit rate) MP3 playback: No
- VBR WMA playback: No
- WMA lossless encoding compatible: No
- DRM (Digital Rights Management) compatible: Yes (DRM-protected audio files will not play in this player—see also DRM in the Glossary on )
- Fileextensions: .mp3, .wma (these must be used for the player to recognize MP3 and WMA files – do not use for other file types)

### About WMA



The Windows Media<sup>®</sup> logo printed on the box indicates that this player can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media<sup>®</sup> Player version 7, 7.1, Windows Media<sup>®</sup> Player for Windows<sup>®</sup> XP, or Windows Media Player 9<sup>®</sup> Series.

Microsoft, Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

## About DivX

DivX is a compressed digital video format created by the DivX<sup>®</sup> video codec from DivXNetworks, Inc. This player can play DivX video files burned on CD-R/RW/ROM discs. Keeping the same terminology as DVD-Video, individual DivX video files are called "Titles". When naming files/titles on a CD-R/RW disc prior to burning, keep in mind that by default they will be played in alphabetical order.

## Displaying DivX subtitle files

The font sets listed below are available for DivX external subtitle files. You can see the proper font set on-screen by setting the **Subtitle Language** (in Language settings) to match the subtitle file.

This player supports the following language groups:

**Group 1:** Albanian (sq), Basque (eu), Catalan (ca), Danish (da), Dutch (nl), English (en), Faroese (fo), Finnish (fi), French (fr), German (de), Icelandic (is), Irish (ga), Italian (it), Norwegian (no), Portuguese (pt), Rhaeto-Romanic (rm), Scottish (gd), Spanish (es), Swedish (sv)

**Group 2:** Albanian (sq), Croatian (hr), Czech (cs), Hungarian (hu), Polish (pl), Romanian (ro), Slovak (sk), Slovenian (sl)

**Group 3:** Bulgarian (bg), Byelorussian (be), Macedonian (mk), Russian (ru), Serbian (sr), Ukrainian (uk)

**Group 4:** Hebrew (iw), Yiddish (ji)

**Group 5:** Turkish (tr)

DivX, DivX Certified, and associated logos are trademarks of DivXNetworks, Inc. and are used under license.

- Some external subtitle files may be displayed incorrectly or not at all.
- For external subtitle files the following subtitle format filename extensions are supported (please note that these files are not shown within the disc navigation menu): .srt, .sub, .ssa, .smi
- The filename of the movie file has to be repeated at the beginning of the filename for the external subtitle file.
- The number of external subtitle files which can be switched for the same movie file is limited to a maximum of 10.

## DivX video compatibility



- Official DivX<sup>®</sup> Certified product.
- Plays DivX5<sup>®</sup>, DivX4<sup>®</sup>, DivX3<sup>®</sup> and DivX<sup>®</sup> VOD video content (in compliance with DivX<sup>®</sup> Certified technical requirements).
- File extensions: .avi and .divx (these must be used for the player to recognize DivX video files). Note that all files with the .avi extension are recognized as MPEG4, but not all of these are necessarily DivX video files and therefore may not be playable on this player.

DivX, DivX Certified, and associated logos are trademarks of DivXNetworks, Inc. and are used under license.

## JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2\* still image files up to a resolution of 3072 x 2048.  
\*File format used by digital still cameras
- Progressive JPEG compatible: No
- File extensions: .jpg (must be used for the player to recognize JPEG files – do not use for other file types)

## PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

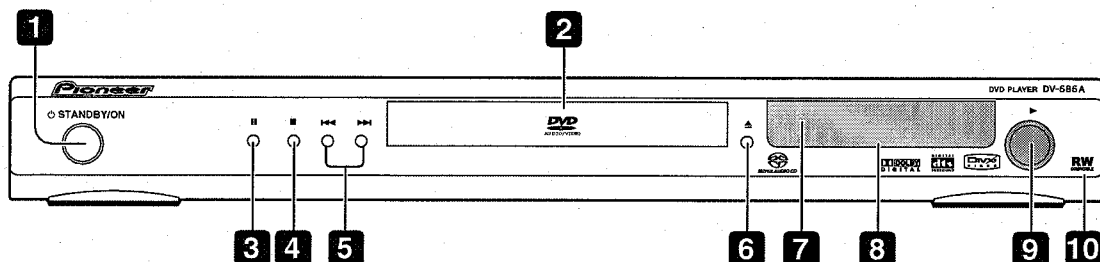
Discs recorded in packet write mode (UDF format) are not compatible with this player.

Check the DVD-R/RW or CD-R/RW software disc boxes for additional compatibility information.

## 8. PANEL FACILITIES

### 8.1 FRONT PANEL SECTION

#### Front panel

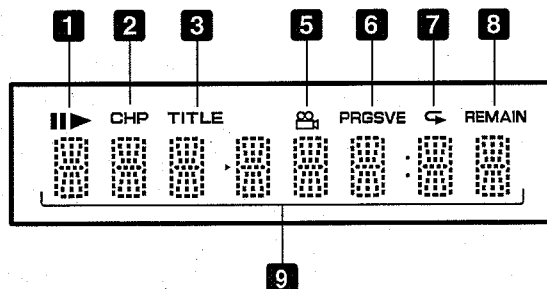


- 1 STANDBY/ON
- 2 Disc tray
- 3
- 4
- 5 and
- 6 OPEN/CLOSE
- 7 Remote control sensor
- 8 Display
- 9
- 10 RW Compatible



## 8.2 DISPLAY

### Display



#### 1 **II and ►**

Indicates whether a disc is playing or paused.

#### 2 **CHP**

Indicates that the character display is showing a DVD chapter number.

#### 3 **TITLE**

Indicates that the character display is showing a DVD title number.

#### 5

Lights during multi-angle scenes on a DVD disc.

#### 6 **PRGSVE**

Lights when the player is set to output progressive scan video.

#### 7

Lights in any of the repeat play modes.

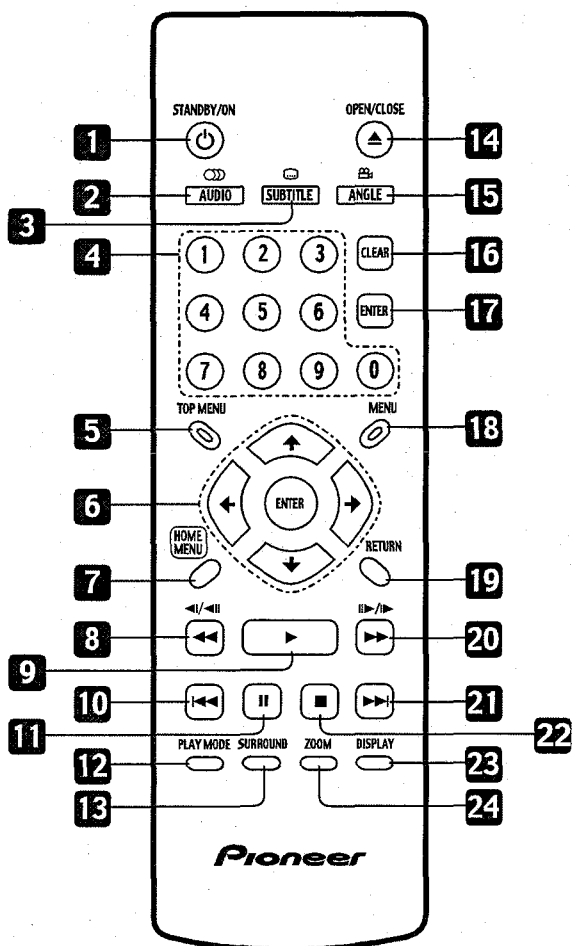
#### 8 **REMAIN**

Indicates that the character display is showing the disc or title/chapter/track remain time.

#### 9 **Character display**

## 8.3 REMOTE CONTROL

### Remote control



#### 1 **STANDBY/ON**

Press to switch the player on or into standby.

#### 2 **AUDIO**

Press to select the audio channel or language.

#### 3 **SUBTITLE**

Press to select a subtitle display.

#### 4 **Number buttons**

#### 5 **TOP MENU**

Press to display the top menu of a DVD disc.

#### 6 **ENTER & cursor buttons**

Use to navigate on-screen displays and menus. Press **ENTER** to select an option or execute a command.

#### 7 **HOME MENU**

Press to display (or exit) the on-screen display.

#### 8 and

Use for reverse slow motion playback, frame reverse and reverse scanning.

#### 9

Press to start or resume playback.

#### 10

chapter or track, then to previous chapters/tracks.

#### 11

Press to pause playback; press again to restart.

#### 12 **PLAY MODE**

Press to display the Play Mode menu. (You can also get to the Play Mode menu by pressing **HOME MENU** and selecting Play Mode).

Press to jump to the beginning of the current

## Remote control 2

### 13 SURROUND

Press to activate/switch off  V/SRS TruSurround.

### 14 OPEN/CLOSE

Press to open or close the disc tray.

### 15 ANGLE

Press to change the camera angle during DVD multi-angle scene playback.

### 16 CLEAR

Press to clear a numeric entry.

### 17 ENTER

Use to select menu options, etc.

### 18 MENU

Press to display a DVD disc menu, or the Disc Navigator if a VR format DVD-RW, CD, Video CD, MP3, WMA or JPEG disc is loaded.

### 19 RETURN

Press to return to a previous menu screen.


### 20 and

Use for forward slow motion playback, frame advance and forward scanning.

### 21

Press to jump to the next chapter or track.

### 22

Press to stop the disc (you can resume playback by pressing  (play)).

### 23 DISPLAY

Press to display information about the disc playing.

### 24 ZOOM

Press to change the zoom level.

## ■ Jigs list

A

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
CD Test Disc	STD-905	Check of CD

B

## ■ Lubricants and Glues list

C

Name	Lubricants and Glues No.	Remark
Dyefree	GEM1036 (ME-913A)	Refer to "2.3 05 DVD MECHA SECTION"
Grease	GYA1001 (PN-397)	Refer to "2.3 05 DVD MECHA SECTION"
Grease	GEM1018 (G-478B)	Refer to "2.3 05 DVD MECHA SECTION"

C

## ■ Cleaning

• Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

D

Position to be cleaned	Cleaning tools	Remark
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008	Refer to "2.3 05 DVD MECHA SECTION" , "7.2 DISASSEMBLY SECTION".

D

E

F